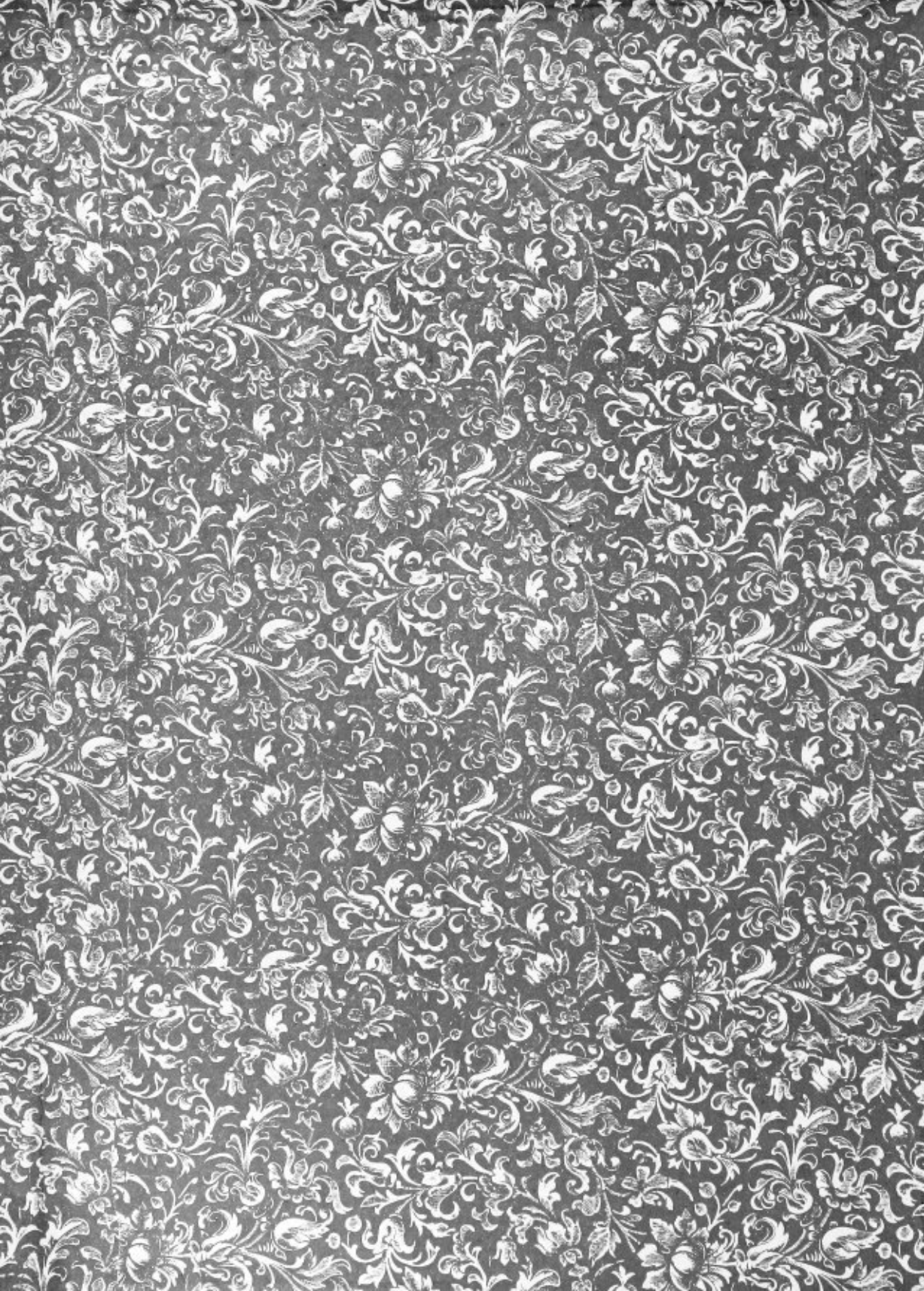
GEO. B. CARPENTER & CO.

CHICAGO

SECOND EDITION

CATALOGUE No. 100



CARNEGIE LIBRARY
PITTSBURGH, PA.

JUNE, 1911

DISCOUNT GUIDE

TO OUR CATALOG NUMBER 100

EDITION No. 2

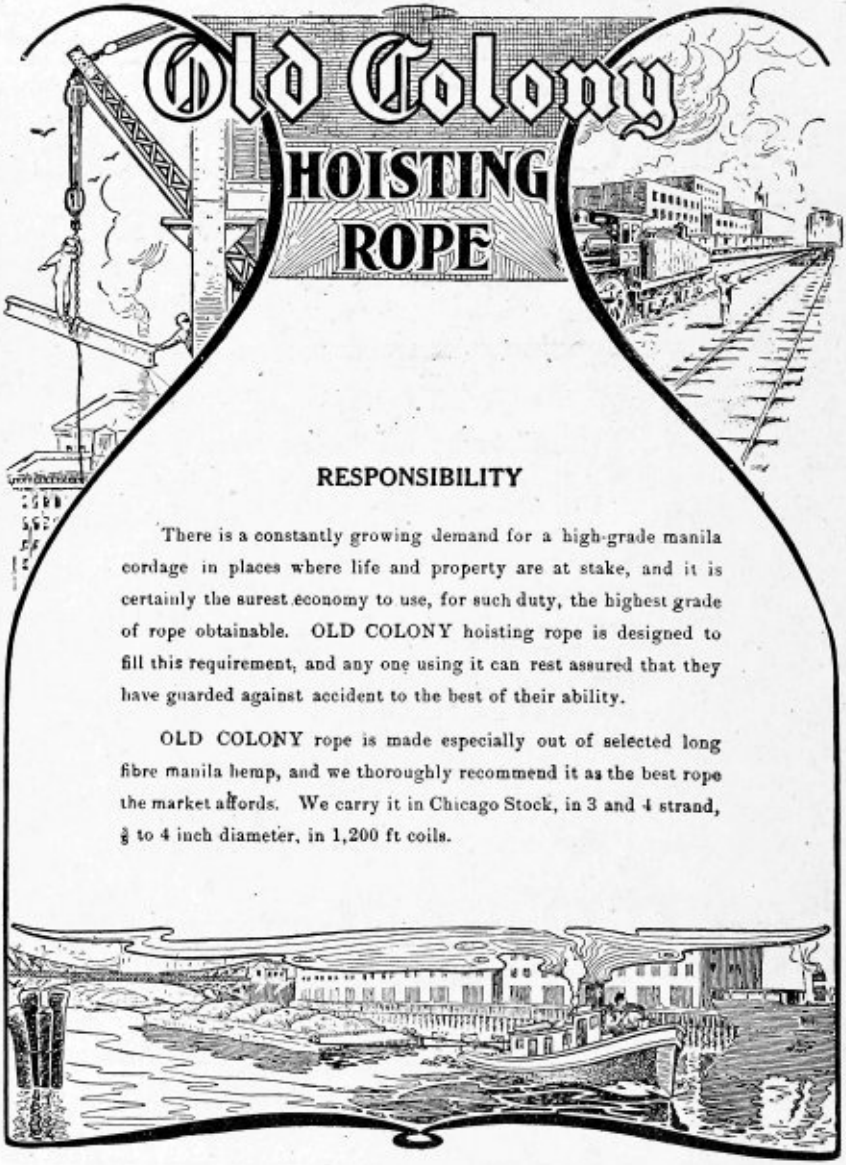
NOTICE!

PLEASE note that the *Discounts* and *Prices* named herein are not *Quotations.* They are offered merely as a guide and are subject to change without notice. Our customers may rest assured that every order will have the benefit of the lowest market prices on the day received, irrespective of the discounts named herein. This position on our part is necessitated by the frequent price fluctuations in many of our staple lines.

GEO·B·CARPENTER & CO.

5TH AVE. BRIDGE CHICAGO.

CORRESPONDENCE SOLICITED



RESPONSIBILITY

There is a constantly growing demand for a high-grade manila cordage in places where life and property are at stake, and it is certainly the surest economy to use, for such duty, the highest grade of rope obtainable. OLD COLONY hoisting rope is designed to fill this requirement, and any one using it can rest assured that they have guarded against accident to the best of their ability.

OLD COLONY rope is made especially out of selected long fibre manila hemp, and we thoroughly recommend it as the best rope the market affords. We carry it in Chicago Stock, in 3 and 4 strand, ⅜ to 4 inch diameter, in 1,200 ft coils.

DISCOUNT GUIDE

PAGE		PRICE
31	Old Colony Manila Hoisting Rope	Market
32, 33	Old Colony Transmission Rope	Market
33	Old Colony Rope Dressing lb.	.25
35	Best Pure Manila Rope	Market
	Standard Pure Manila Rope	Market
	Diamond H Manila Rope	Market
36	Hawser Laid Manila Rope	Market
	Tallow Laid Manila Rope	Market
	Steam Tarred Manila and Sisal Rope	Market
	Binder Twine	Market
37	Sisal Rope	Market
	Sisal Hay and Hide Rope	Market
38	Lathyarn	Market
	Ringyarn	Market
39	Cotton Rope—	
	Old Colony, Reels, 3/16" diameter lb.	.20
	Old Colony, Reels, 1/4" and 5/16" lb.	.19
	Old Colony, Tubes, Advance lb.	.01
	A Cotton Rope—	
	Reels, 1/4" to 5/8" lb.	.22
	Coils, 3/4" to 1 1/4" lb.	.23
	Jute Rope, 3/16" dia lb.	.08
	Jute Rope, 1/4" to 3/4" lb.	1/2c less
	Tarred Cordage	Market
	Hemp Packing—	
	Italian A, 25 and 50 lb. Coils 12, Less	.15
	Italian B, 25 and 50 lb. Coils 11, Less	.14
	American A, 25 to 50 lb. Coils 09½, Less	.12
	American B, 25 and 50 lb. Coils 08, Less	.10
	Jute, 100 lb. Coils 05, Less	.06
	Tarred Jute, 100 lb. Coils 05, Less	.06
	Cable Laid Hemp Bell Cords—	
	Italian lb.	.19
	American lb.	.16½
	India lb.	.11½
40	Oakum—	
	Best, 50 lb. Bales	$3.50
	U. S. Navy, 50 lb. Bales	3.30
	Navy, 50 lb. Bales	3.00
	Spun, Advance, 50 lb. Bales	.75
	Plumbers Spun, 50 lb. Bales	1.50
	Spun Cotton, 50 lb. Bales—	
	Yacht lb.	.19
	Navy lb.	.12½

PAGE		PRICE
40	Candle Wicking, 100 lb. Bales—	
	A	$0.25
	Diamond B	.22½
	H	.21½
	K	.14
	Braided Torch	.38
	Rope Laid Torch	.22½
	Tow	.03
	Excelsior	.01½
	Pitch Mops ea.	.35
	Pitch Ladles, Tin ea.	.35
	Pitch Ladles, Iron ea.	.45
	Pine Tar, Barrels ea. net	5.00
	5 Gal. Cans, per doz	25.00
	3 Gal. Cans, per doz	14.40
	2 Gal. Cans, per doz	12.50
	1 Gal. Cans, per doz	5.75
	½ Gal. Cans, per doz	4.00
	Quart Cans, per doz	2.00
	Pint Cans, per doz	1.25
	Pine Pitch, Barrels lb.	.03
	Pine Pitch, Packages, lb.	.05 to .07
	Coal Tar, Barrel ea.	3.50
	5 Gal. Cans, per dozen	25.00
	2 Gal. Cans, per dozen	12.50
	1 Gal. Can, per dozen	5.75
	Coal Tar Pitch—	
	Barrels, about 380 lbs. lb.	.01½
	Boxes	.04
	Resin, Barrels, about 500 lbs. lb.	.03½
	Boxes lb.	.05 to .08
	Tarred Felt—Rolls about 50 lbs. lb.	.01½
41	Braided Cotton Sash Cords—	
	Old Colony and Anniston, No. 8 to No. 12 lb.	.25
	No. 7 advance lb.	.00½
	No. 6 advance lb.	.01½
	Golden Oak, Advance lb.	.02
	Samson Spot No. 8 to No. 12 lb.	.45
	No. 7 advance lb.	.00½
	No. 6 advance lb.	.01½
	Silver Lake A—	
	No. 8 to No. 12 lb.	.40
	No. 7 advance lb.	.00½
	No. 6 advance lb.	.01½
	Silver Lake B lb.	.36
42	Braided Cotton Bell Cord—	
	Old Colony, White No. 8 to No. 10 lb.	.26
	No. 7 advance lb.	.00½
	No. 6 advance lb.	.01½
	Drab advance lb.	.07
	Mahogany advance lb.	.08

PAGE		PRICE
42	Samson, White .....lb.	$0.43
	Drab .....lb.	.42
	Mahogany .....lb.	.43
	Solid Braided Cotton Rope, White, Coils .....lb.	.38
	Solid Braided Cotton Rope, Drab, Coils .....lb.	.38
	Braided Italian Rope.....lb.	.40
	Braided Linen Rope .....lb.	.55
	Trolley and Arc Light, Waterproofed .....lb.	.41
	Bell Cord Couplings.....	20%
	Valve Cord Hooks.....	20%
	Small Braided Lines, No. 3½ to No. 5.....	20%
	Braided Chalk Lines.....	25%
	Braided Garden Lines.....	15%
43	Clothes Lines, Per Gross of 50' Lengths—	
	Anniston, Waterproof, Braided Cotton	$33.75
	Oriole, Waterproof, Braided Cotton	30.00
	Rainbow, Waterproof Braided Cotton	22.50
	Gilt Edge, Solid Braided Cotton	30.00
	Acme, Solid Braided Cotton	21.00
	Empire Solid Braided Cotton	18.00
	Alabama, Braided Cotton.	19.50
	Advance, Braided Cotton..	16.50
	Albemarle, Braided Cotton	16.50
	Allston, Braided Cotton...	15.00
	Eclipse, Braided Cotton...	15.00
	Chicago, Braided Cotton..	15.00
	Standard, Braided Cotton..	13.00
	Columbia, Braided Cotton.	10.50
	Manila, Twisted	14.50
	North Shore Hemp, Twisted	15.50
	Star Cotton, Twisted.....	14.50
	Luzon Hemp, Linen Finish	14.50
	Samar Finish	11.00
	Rajah Unfinished India....	10.00
	Jute .....lb.	.09
	Sisal, 6 thread, Twisted...	11.00
	Sisal, 3 thread, Twisted...	9.00
	Bull Dog, Twisted.....	8.50
44	Lariat Rope .....Market	
	Tom Horn Lariats.....	20%
	Braided Cotton and Linen Lariats	10%
	Lariat Hondas, Rawhide....	10%
	Galvanized .....doz.	$0.50
	Brass .....doz.	.90
45	Twines—	
	B. Italian, No. 12.....lb.	.25
	No. 18	.23
	No. 24	.22½
	No. 36	.22
	No. 48	.21½

PAGE		PRICE
45	No. 60.....$0.21½	
	B. American, No. 9.....	.24
	No. 12	.22
	No. 18	.20
	No. 24	.19½
	No. 36	.19
	No. 48	.18½
	No. 60	.18½
	B. C., No. 12.....	.20
	No. 18	.18
	No. 24	.17½
	No. 36	.17
	No. 48	.16½
	No. 60	.16½
	Empress, No. 12.....	.16
	No. 18	.14
	No. 24	.13½
	No. 36	.13
	No. 48	.12½
	No. 60	.12½
	Banner No. 18.....	.13
	No. 24	.12½
	No. 36	.12
	No. 48	.11½
	B. American SS., No. 4½.	.14½
	No. 5	.15½
	No. 6	.14½
	No. 7	.14
	No. 8	.13½
	B. C. American, No. 4½...	.13
	No. 5	.14
	No. 6	.13
	No. 7	.12½
	No. 8	.12
	India, No. 4½.....	.10
	No. 5	.11
	No. 6	.10
	No. 7	.09½
	No. 8	.09
46	Baling or Sewing Twines—	
	Jute, 3 to 6 ply.....	.11
	L. M., 3 to 6 ply.....	.18
	Diamond, 3 to 6 ply.....	.22
	A Sail, 3 to 4 ply.....	.28½
	A A Sail, 3 and 4 ply.....	.36
	Excelsior, 3 and 4 ply.....	.37
	Andover, 3 to 5 ply.....	.38
	Silver Finish, 3 to 4 ply...	.39
	Flax Ball Twines—	
	Blocking Cord, No. 9.....	.45
	No. 12 to No. 48.....	.43
	Gray Cable, No. 9.....	.80
	No. 12	.70
	No. 18 to No. 24.....	.60
	No. 36 to No. 48.....	.58
	No. 6 Red Linen.....	.48
	No. 24 White Flax.....	.55
	Mattress Twines, No. 252 and No. 264, Special....	.41
	Mattress Twines, No. 252 and No. 264, Extra.....	.36

PAGE		PRICE
46	Mattress Twines, Elm Flax, No. 252 and No. 264....	$0.60
	Linen Twines—	
	Victor Machine	.80
	Shoe Thread	.70
	Linen Finished Twines—	
	No. 533 White.....lb.	.50
	No. 533 Pink.....	.50
	No. 206 Red and White...	.45
	No. 24 White.....	.55
	No. 705 White.....	.50
	No. 151 White.....	.50
47	Jute Twines—	
	Wrapping, A Grade, 3 to 6 ply	.09½
	Wrapping, B Grade, 3 to 6 ply	.09
	Tube Rope, 4 and 5 ply...	.09
	Tube Rope, 6 ply and larger	.08½
	Wool Twine, No. 1, Unoiled, 3 and 4 ply.....	.08
	Wool Twine, No. 2.....	.07½
	Buffalo Rope, 3 and 4 ply..	.08½
	Box Twine, 2 ply.....	.09½
	Seaming Cord, 10 ply.....	.14
	Wall Paper Twine, 3 and 4 ply	.10
48	Cotton Twines—	
	Old Colony Cotton, 3 and 4 ply	.24
	Old Colony Cotton, Butchers, 4, 6 and 8 ply.....	.24
	Machine Sewing Twine, Reverse Twist	.26
	Sail Twine	.26
	Mop Yarn, 4 ply.....	.18
	Carpet Warp	.24
	Mops—	
	Dandy .....lb.	.13
	Slasher	.17
	Star	.22
	Champion	5%
49	Cotton Lines—	
	Staging Twine, all numbers	.25
	Trout Lines, all numbers..	.24
	Mason Lines, White and Yellow, all numbers.....	33⅓%
	Seine Twine—Soft Laid, 6 thread.....	.30
	9 thread.....	.27
	12 thread.....	.26½
	16 thread and larger..	.26
	Medium Laid, 6 thread..	.32
	9 thread.....	.28
	12 thread.....	.27
	15 to 42 thread.....	.26½
	Larger	.26
	Maitre, 60 thread and larger	.26
	Seine Twine, Patent Laid, 6 thread.....	.41
	9 thread.....	.31½
	12 thread.....	.29

PAGE		PRICE
49	15 to 42 thread.....	$0.28
	Larger	.27½
52	Wire Rope, all Grades—..50-2½%	
	Except Power Steel....45-2½%	
53	Wire Rope, all Grades...50-2½%	
	Wire Cords—	
	Swedes Iron	50%
	Galvanized	40%
	Copper	30%
54	Wire Rope, Galvanized 42½-2½%	
	Except Strand	60%
55	Wire Rope, Phosphor Bronze, all Grades.....	10%
	Wheels Trans. Power...	30%
	Sheaves	30%
	Rubber Lining	10%
56	Switch Ropes—	
	Power Steel	45%
	Crucible Cast Steel.....	50%
	Old Colony Manila. On Applicat'n.	
	Push Poles	25%
57	Wire Rope Fastenings.....	45%
58	Crosby Clips, Genuine.....	50%
	Bull Dog Clips 50-10%	
	Wire Rope Clamps	20%
	Ferry Travelers	30%
	Wire Rope Thimbles	50%
	Carews Wire Cutters.....	15%
59	Turnbuckles—	
	Stub, ⅜" to 1" Inc.....	50%
	1⅛" to 1¼".....40-10%	
	1⅜" to 2".....	40%
	2⅛" and Larger.....	35%
	Without Stub, ⅜" to 2" dia.	65%
	Larger	60%
	Hook and Eye, ⅜" to 1⅛" 50-10%	
	Larger	50%
60	Sleeve	30%
	Pipe	30%
61, 62	Chain—	

LIST.

Size	Common	Dredge	Steel Logging
3/16"	$8.70	.....	.....
¼"	6.15	.....	$15.50
5/16"	5.15	.....	12.50
⅜"	4.60	.....	10.50
7/16"	4.30	.....	10.25
½"	4.10	$8.55	9.50
9/16"	4.10	8.55	....
⅝"	4.00	8.30	....
¾"	3.90	7.80	....
⅞"	3.80	7.30	....
1"	3.70	6.80	....
1⅛"	3.75	6.55	....
1¼"	3.75	6.45	....
	BB add to common..per hd.		1.25
	BBB add to common.per hd.		1.75

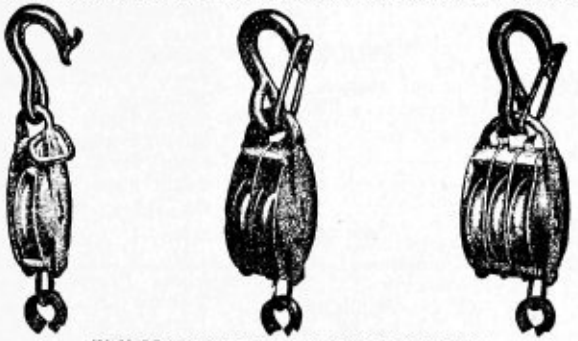
63 Log or Binding Chain, Railroad Switch, or Wrecking Chain, Same Price as Chain with Extras for Hooks, Net per cwt.

PAGE		PRICE
63	German Coil Chain, Bright Wire, Packages	60%
	German Coil Chain, Galv. Wire, Packages	30%
64	Connecting Links—	
	Missing Link	50%
	Cold Shuts	40%
	Bright Links	50%
	Bunk or Grab Hooks	40%
	Swivels, Chain ....lb.	$0.12
	Swivels, Lariat ....lb.	.15
	Picket Pins	30%
67	Regular Iron Strapped Blocks—	
	Common and Patent Bushed	75%
	Self Lubricating Bushed..	50%
68	Thick Mortise Iron Strapped Blocks—	
	Common and Patent Bushed	60%
	Self Lubricating Bushed...	50%
69	Extra Heavy Iron Strapped Blocks—	
	Common Bushed	40%
	Self Lubricating Bushed..	35%
70	Improved Wood Snatch Blocks—	
	Common and Patent Bushed 6" to 16"	60%
	Metalline Bushed, 6" to 16"	50%
	All Kinds, 18" to 24"	50%
	Telegraph Blocks	30%
71	New Style Cargo Hoists	30%
	Wrought Iron Gin Blocks...	40%
	Well Wheels	15%
74 to 88	Hartz Steel Blocks—(Note Inc. Low List Price)	50%
	Except page 83, Special Steel Tackle Blocks	60-10%
89	Awning Blocks—	
	Swivel Eye	40%
	Pressed Steel	40%
	Fast Eye, No. 0 to No. 8 Inc.	40%
	Fast Eye, No. 9 to No. 16.	35%
90	Galvanized Blocks—	
	With Loose Hooks, No. 1 to No. 8	40%
	With Loose Hooks, No. 9 to No. 16	35%
	With Match Hooks, No. 1 to No. 8	20%
	With Match Hooks, No. 9 to No. 16	15%
	Cast Iron Blocks	40-10%
91	Erickson Electric Light Blocks	30%
	Cheek Halyard Blocks, Galv., Single	20%
	Cheek Halyard Blocks, Galv., Double	30%
	Cheek Halyard Blocks, Brass, Single, No. 0 and 1	50-10%
	Single, No. 2 and 3	20%
	Double, No. 2 and 3	10%

PAGE		PRICE
91	Deck Halyard Blocks, Galv., Single	20%
	Deck Halyard Blocks, Galv., Double	30%
	Brass	30%
	Cheek Halyard Blocks for Wire Rope, Galv	10%
	Cheek Halyard Blocks for Wire Rope, Plain Brass	15%
92	Bronze Yacht Blocks	10%
	Note corrected list on Style R. & S.—	
	No. 1, each	$1.00
	No. 2, each	1.35
	No. 3, each	1.75
93	Crescent Edge Lignum-vitæ Yacht Blocks	10%
94	Ash Yacht Blocks	10%
	Iron Sheaves for Manila Rope—	
	Common and Pat. Bushed.	40-10%
	Metalline Bushed	35%
95	Iron Sheaves for Wire Rope—	
	Common and Pat. Bushed.	35%
	Self Lubricating Bushed..	30%
	Iron Sheaves for Chain	30%
	Lignum-vitæ Sheaves for Manila Rope—	
	Common and Pat. Bushed	35%
96	Sure Grip Tackle Blocks	30%
	Track and Hangers	15%
98	Weston Differential Hoists.	50-10%
	Parts for Differential Hoists	50%
99	Harrington Screw Hoist	20%
100-102	Parts of Harrington Screw Hoist	15%
103	Combined Travelers with Harrington Screw Hoist..	20%
105	Peerless Hoist	25-5%
106, 107	Parts of Peerless Hoist.	20%
108	Quick Speed Peerless Hoist.	25-5%
109	Combined Travelers with Peerless Hoist	25-5%
110	Peerless Trolley Hoists	25-5%
111	Parts of Army and Navy Peerless	20%
112	Duplex Hoist	15%
113	Parts of Duplex Hoist	10%
114	Triplex Hoist	20%
115 to 117	Parts of Triplex Hoist	15%
118	Triplex Combined Hoist	20%
119, 120	Triplex Electric Hoist..	20%
121	Cyclone Chain Hoist	25%
122	Parts for Cyclone Hoist	15%
123	Pneumatic Geared Hoist	20%
124	I-Beam Travelers	25-5%
125	Flat Rail Travelers	25-5%
126	Wall or Post Crane	20%
	Simplex Portable Crane and Hoist	25%
127	Traveling Cranes	20%
128	Stages and Wood Ladders	30%
	Painters' Falls	Market

HARTZ STEEL TACKLE BLOCKS

THE STRONGEST AND MOST CAREFULLY CONSTRUCTED BLOCKS ON EARTH



NO MORE BREAKING OR STRAIGHTENING OF HOOKS

They are manufactured under the immediate supervision of the Manufacturer, whose years of practical experience have made him the best known authority in the United States.

The day of wood has passed in Tackle Blocks as in many other manufactured articles. Steel, the strongest and lightest of all commercial metals, is to-day used in all possible manufactured articles. This was recognized and advantage taken of by the inventor and the result is shown not only in the Hartz Block as to its great strength in comparison with other blocks, but the general finish as well.

The careful rounding of the edges of the shells, to prevent the ropes from being chafed, is a feature in the Hartz Blocks which one can not afford to overlook.

The average buyer does not wish to economize on the price of Tackle Blocks at the expense of the rope.

Don't be tempted by cheap prices on weak blocks. To-day when the responsibility of accidents, so often causing loss of life, is settled upon the owners of defective property, much care should be taken in selecting only the best of everything. This is particularly true in the purchase of Tackle Blocks.

The Shells are wrought steel with edges nicely rounded out to prevent chafing of rope. The edges are also upset, thus adding greatly to the strength.

These shells will not break like iron or wood, should the block be dropped from a height.

Neither will they dent, except under most extraordinary circumstances.

They are the most durable shells ever put on tackle blocks.

The Straps, of best quality open hearth steel, run on the inside of the shells, and down to the beckets in all sizes larger than 6-inch blocks. In smaller sizes the straps run below the pin. There are middle straps in all double and triple Hartz Blocks.

The Pins used in the Hartz Blocks are steel.

The Hooks furnished are the patent safety link style, which add much to the value of the blocks. No extra charge is made for them. These hooks can not be had on any other than the Hartz Blocks. The greatest care is used as to quality of material and workmanship. They are all made of open hearth steel.

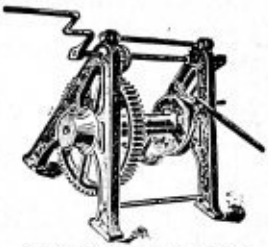
PAGE		PRICE
128	Drop cloths	Market
	Wire and Manila Rope Ladders	10%
129	to 133, Inc. Hoisting Engines	On Application
134	Horse Power Hoisting Machines	15%
135	Drum Belt Hoists	25%
136, 137	Drum Electric Hoists	25%
141	to 144 Steel Derricks	35%
145	to 189 Derricks, Fittings and Hand Powers except	20%
173	Stone Grab Hooks—Lewises	40%
190	Setter's Derrick	40%
191	Skips	30%
191A	Williams Buckets	10%
191B	Smooth-On Compound..lb.	$0.35
	James Orr Boiler Compound	10%
192	Koehring Concrete Mixers	On Application
195	Sasgen Derrick	Net
196	to 200, Inc. Pile Drivers and Fittings	50%
201	Jacks—	
	Steamboat	30%
	Pearson	30%
	Screw Track	65%
202	Jack Screws	65-10%
203	Jack Screws, Locomotive	70-10-5%
	Jack Screws, House Raising	50-10-5%
	Maple Rollers	40%
204	Hydraulic Jacks	40%
205, 206	Ball Bearing Jacks	30%
207	Jenne Track Jacks	60%
	Telescopic Jack Screws	50%
	Buda Geared Ratchet Jacks	50%
208	Ratchet Trip Jacks	70%
209	Stone Jacks, Wood Frame	25%
	Stone Jacks, Iron Frame	35%
	Weiler Jack	Not Made
	Simplex Jack	60%
	Peerless Jack	40%
	New Samson Jack	40%
210	Providence Power Capstans	Net
	Providence Ratchet Capstans	Net
	NOTE CHANGE IN LIST AND WEIGHTS:	
	A, 160 lbs.	$30.00
	C, 400 lbs.	55.00
211	Providence Crank Capstan	Net
	Providence Horse Power Capstan	Net
	Providence Steam Capstan	On Application
212	Pump Brake Ratchet Gypsy Windlass	25%
	Improved Gypsy Windlass	20%
212	Galvanized	On Application
	Cavel Capstan	Net

PAGE		PRICE
213	Edson's Diaphragm Force Pump	15%
	NOTE CHANGE IN LIST PRICE:	
	Side Suction	$25.00
	Bottom Suction	20.00
	Iron Pipe	70%
	Suction Hose	60-10%
	Hose and Couplings	60%
	Leaky Nozzles	40%
	Foot Valves	60%
	Strainers	40%
214	Edson Pump	15%
	Edson Pump Repairs	10%
215	Spiral Hand Suction Pump	25%
	Yacht Pattern Hand Pump	20%
	"Wurkeze" Bilge Pump—	
	No. 1 Net	$1.70
	No. 2	2.75
216	Alpha Portable Pumping Outfit	10%
	Turret Tank Pump	50%
	"Tiger" Force Pump	50%
217	Pumps—	
	Challenge	40%
	Pearson No. 2	50%
	Pearson No. 3	45%
	Combination	10%
218	Edson Pile Sinking Outfit	5%
219	Centrifugal Pumps, Iron	50-5%
220	Centrifugal Pumps, Iron	45%
	Best Yet Power Pump	30%
221	Emerson Steam Pump	Net
222	Steam Pumps	40%
223, 224	Gardner Pumps	On Application
225	to 231, Inc. Diving Apparatus	10%
232	to 235, Inc. Lumbering Tools and Parts	50%
236	Everlasting Steel Eveners, Neck Yokes and Whiffletrees	25%
	Wood Neck Yokes, Singletrees and Eveners	30%
	Iron Work	20%
237	Entire Page	50%
238	Entire Page	10%
239	Stamps, Letters and Figures	10%
	Leather Aprons	20%
240	Lumbermen's Pencil Holder	Net
	Lumbermen's Pencils	20%
	Metal Workers' Crayons, Dixon's	40%
	Metal Workers' Crayons, Standard, Round and Square, gross	$1.75
	Railroad Crayons	40%
	Pencils, Office and Carpenters'	10%
	Carpenters' Chalk	20%
	School Crayons	10%
241	Stencil Brushes and Ink	10%
	Wadleigh Tape Line	10%

Style No. 10, Single Purchase without Nigger Head

HOISTING WINCHES

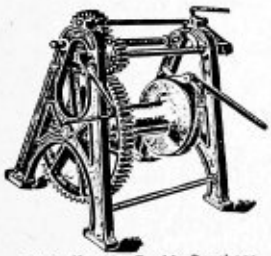
IRON FRAME WITH BRAKE



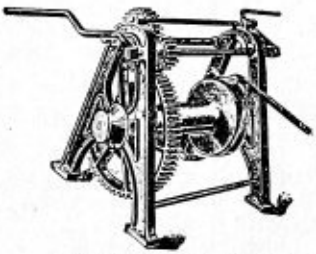
Style No. 10, Single Purchase with Nigger Head

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum Inches	Diameter of Gear and Pinion	Lift of Two Men, Direct Single Line lbs.	Lift with Double and Triple Blocks Two Men lbs.	Price without Nigger Head	Price with Nigger Head	Size of Nigger Head Inches
6250	4½x12	18-6	900	4,500	$29.00	$36.00	4x6
6251	4½x14	21-5¼	1,250	6,250	31.00	38.50	4x6
6252	4½x16	24-4	1,800	9,000	36.00	44.00	4x6
6253	5 x18	25-4	2,500	12,500	45.00	53.50	4x6
6254	6 x21	25-4	2,000	10,000	45.00	53.50	4x6



Style No. 11. Double Purchase without Nigger Head



Style No. 11. Double Purchase with Nigger Head

CAPACITY FOR FOUR MEN

No	Diameter and Length of Drum Inches	Diameter of Gears and Pinion	Lift of Two Men, Direct Single Line lbs.	Lift with Double and Triple Blocks Two Men lbs.	Price without Nigger Head	Price with Nigger Head	Size of Nigger Head Inches
6258	4½x16	24- 9 -4	3,000	15,000	$42.00	$50.50	4x6
6259	4½x18	25- 9 -4	4,000	20,000	48.00	57.00	6x7
6260	5 x19	27-13½-4	4,500	22,500	61.00	70.50	6x7
6261	6 x21	29-12½-5	4,500	22,500	67.00	76.50	6x7
6262	6½x22	33-13½-5½	5,000	25,000	75.00	85.00	6x7
6263	9 x16	25- 8¼-4	3,000	15,000	60.00	68.50	4x6
6264	9 x21	25- 8¼-4	3,000	15,000	65.00	73.50	4x6

Extra for Machine with Wheel Brake, add $5.00 to list price

WE CAN FURNISH THE ABOVE WITH STEEL SIDES. PRICES ON APPLICATION

PAGE		PRICE
241	Lumber Gauges	10%
	Benton Tally Register	10%
	Empire Automatic Counter	20%
	Boot Calks, per M	$4.00
	Calk Sets	Net
242, 243	Board and Log Rules	40%
244	Electric Construction Tools.	40%
245 to 250	Cotton Duck....On Application Inc.	
251	U. S. Flags	40-10%
252	U. S. Yacht Ensigns, 2 to 6 ft.	35%
	U. S. Yacht Ensigns, Larger.	30%
	U. S. Pennants	30%
	U. S. Streamers	30%
	U. S. Jacks	40%
	Club Signals	35%
253	Burgees	20%
	U. S. Weather Signals	30%
	U. S. Storm Signals	30%
254	U. S. Code Signals	35%
	U. S. Code Book	Net
255	U. S. Code Signal Bag	10%
	Foreign Nations' Flags, Bunting	25%
	Printed Silk U. S. Flags	25%
256	Foreign Merchant Flags, Bunting	25%
	Silk Foreign Nations Flag	25%
257	U. S. Muslin Flags, Sewed Stars and Stripes	25%
	U. S. Muslin Flags, Printed.	25%
	U. S. Cotton Flags, Liberty Brand	10%
	Foreign Flags, Printed	25%
258	Mast Head Trucks and Gilt Balls	10%
	Flag Staffs and Poles	20%
259	Flag Staff Brackets, Ineeda	15%
	Flag Staff Holders	25%
	Mast Head Balls	10%
	Flag Staff Ornaments	20%
261 to 270	Tents Inc.	30%
271	Palmetto with Awning Extension	40%
	Palmetto without Awning Extension	40-10%
272	Amazon Tents	30%
	Beach	30%
273, 274	Silkolene Tents	40%
275	Wall Tents	30%
276	LaPointe Tents	10%
277	Window Tents ....Net, ea.	$12.00
278 to 282	Inc. Tents	30%
283 to 285	Inc. Tents	Net
286	Bed Sheets	25%
	McCall Tents	Net
287	Stack Covers—Send for Special Net List.	
	Hay Cock Covers	15%
288	Paulins, Send for S. N. List.	
	Harvester and Binder Cov...	Net
	Separator Covers	25%
289	Wagon Covers, Emigrant	10%
290	Covers—	
	Belgian Flax	15%
	No. 10 Brown Paraffine	40%
	12 oz. Army Brown Paraffine	40-10%
	10 oz. Army Brown Paraffine	50%
	8 oz. Army Brown Paraffine	55-5%
	12 oz. White Paraffine	50%
	10 oz. White Paraffine	50-5%
	8 oz. White Paraffine	55%
	10 oz. U. S. Army Tan Textol	40%
	13¼ oz. U. S. Army Tan Textol	35%
	10 oz. U. S. Army, Yellow Oiled	40%
	10 oz. U. S. Army Brown, Oiled	40%
	10 oz. U. S. Army Black, Oiled	40%
291	Columbia Blanket Lined Horse Covers	40%
	Rain proof Covers	40%
292	Wagon Umbrellas	35%
	Wagon Tops	40%
293	Mason Bags and Satchels	10%
	Mail Bags	30%
	Plumbers' Tool Bags	10%
	Sleeping Bags	20%
294	Feed Bags	40%
	Coal Bags, Regular....ea.	$0.60
	Coal Bags, Mildew Proof.ea.	.66
	Housings	10%
	Sailor Bags, White....ea.	$0.75
	Waterproof	1.75
	Less	10%
	Piano Covers	40%
	Cab Curtains ....On Application	
297 to 299	Inc. Awnings....On Application	
300 to 303	Camp Furniture Inc.	25%
304	Lawn Swing, Erickson	35%
	Lawn Swing, Child's and Standard (See corrected list)	35%

Standard.			Canopy Extra.
8 ft.	ea.	$12.60	$4.75
10 ft.	ea.	15.75	5.25
12 ft.	ea.	19.00	5.25
14 ft.	ea.	38.00	6.50
16 ft.	ea.	50.00	6.50

TENTS

Regular Wall Tents complete with Poles, Stakes, Guys, and Keys

MACHINE SEWED

Prices do not include Flies Flies for any size Tent will be furnished without poles at one-half the price of the Tent. If higher walls than list specifies are wanted, add 5 per cent to list for each additional 6 inches of wall so added.

Size	Height of Center	Height of Wall	8 oz. Duck Single Filling	10 oz. Duck Single Filling	10 oz. Duck Double and Twisted Filling, or 8 oz. Army	12 oz. Duck Double and Twisted Filling, or 10 oz. Army	12 oz. Army Duck or No. 10	15 oz. Army Duck or No. 8
7 x 7	7	3	$8.00	$9.35	$10.35	$12.25	$14.55	$17.50
7 x 9	7	3	9.50	11.05	12.30	14.60	17.40	20.90
9 x 9	7½	3	10.95	12.80	14.30	17.00	20.30	24.50
9½x12	7½	3	12.90	15.05	16.80	19.95	23.80	28.70
9½x11	7½	3	14.65	17.10	19.10	22.65	27.05	32.55
12 x12	8	3½	15.30	17.95	20.00	23.75	28.40	34.25
12 x14	8	3½	17.30	20.20	22.55	26.80	32.05	38.60
12 x16	8	3½	19.20	22.45	25.05	29.80	35.65	43.00
12 x18	8	3½	21.35	24.95	27.80	33.00	39.45	47.50
14 x14	9	4	20.60	24.15	26.95	32.10	38.45	46.45
14 x16	9	4	22.70	26.65	29.80	35.50	42.55	51.35
14 x18	9	4	25.35	29.75	33.20	39.45	47.30	57.10
14 x20	9	4	28.20	32.75	36.40	43.00	51.15	61.40
14 x24	9	4	31.80	36.90	41.00	48.10	57.25	68.75
16 x16	11	5	28.20	33.20	37.15	44.10	53.05	64.25
16 x18	11	5	30.95	36.40	40.75	48.25	58.00	70.20
16 x20	11	5	34.10	39.80	44.30	52.15	62.30	75.00
16 x24	11	5	38.85	45.20	50.25	59.05	70.40	84.65
16 x30	11	5	47.00	54.75	60.85	71.50	85.30	102.60
16 x35	11	5	52.60	61.30	68.10	80.20	95.60	114.95
18 x18	11	5	35.40	41.60	46.45	55.20	66.20	79.95
18 x20	11	5	39.00	45.45	50.50	59.70	71.10	85.45
18 x24	11	5	43.60	50.85	56.50	66.50	79.25	95.25
18 x30	11	5	52.25	60.90	67.75	79.95	95.35	114.65
18 x35	11	5	58.15	67.80	75.40	89.05	106.25	127.75

We recommend and always insert an Asbestos Stone Pipe Ring — which is noiseless, and can be rolled up without injury — in the rear end wall. Extra for same $3.00

All Tents are made with one door as illustrated. For an extra door, extra, $1.50.

Sod Cloths 9 in. wide are attached to bottom of wall of Tents to keep out insects, at 6 cents per lineal foot.

If Rope Ridge is wanted — without poles — same will be furnished without an additional charge.

For Silkelene Wall Tents, see page 273.

PAGE		PRICE
		Child's.
304	6 ft. ea.	$5.25
	8 ft. ea.	7.50
	10 ft. ea.	11.75
	Swinging Veranda Seats	40%
305	No. 52 Hammock Frame	40%
	Lawneta not	made
	Chairs	25%
	Lawn Canopy	30%
306	Kamp Kook's Kit	40%
307	Camp Stoves—	
	Sportman's Friend	40%
	Sportman's Delight	40%
	Little Pet	40%
	Happy Rover	33⅓%
	Sibley Heating	33⅓%
308	Barthel's Stoves	Net
309	Axes	10%
	Ideal Hunting Knife	10%
	Yachtman's Knife	Net
	Automatic Folding Lantern	Net
	Compass and Bracket	10%
	Thermos Bottles (See corrected List).	
310	Duplex Baskets and Pails	10%
	Hawkeye Baskets	Net
311	Spanish Porch Hammock	20%
	Navy Canvas Hammock	Net
	Peerless Adjustable Hammock Chair	10%
313	Rubber Belting—	
	Rainbow	35%
	Diamond P	45%
	Peerless	50%
	Durham	60%
316	Leather Belting—	
	Best Quality, Double	60-10%
	Best Quality, Single	60-10%
	Short Lap, Double	70%
	Short Lap, Single	70%
317	Belt Makers' Tools	10%
	Except Belt Clamps	40-10%
	Glue Heater	25%
	Dixon's Belt Dressing	Net
	Pure Leather Cement	50%
	Rubber Cement Doz. Lots	Each
	½ Pt. Cans $3.00 Net	$0.30
	1 Pt. Cans 3.50	.60
	1 Qt. Cans 10.50	1.00
	1 Gal. Cans 30.00	3.00
318	Cotton Belting	50%
	Stitched Canvas Belting	70%
	Cotton Sand Belting	25%
319	Lace Leather, Sides sq. ft.	$0.27
	Lace Leather, Cut	40%
	Composition Wire Belt Lacing	75%
	Tools for Lacing	10%
	Century Gasket Cutter	40%
	Improved Belt Punch and Lace Cutter	10%
	Improved Belt Punch	10%

PAGE		PRICE
319	Lothrop Patent Belt Awl	20%
	Lace Cutter	20%
	Revolving Belt Punch	60%
	Belt Couplings	50%
320	Oval Belt Punches	20%
	Combination Belt Cutter	20%
	Round Belt Punches	50%
	Rivet Set and Header	60%
	Tubular Rivets	10%
	Copper Rivets and Burrs	40%
	Slotted Clinch Rivets	10%
321	Blake's Belt Studs	50%
	LX Belt Studs	40%
	Oval Belt Hooks	75%
	Jones' Belt Hooks	60%
322	Covel Belt Hooks	50%
	Potter's Belt Hooks	50%
	Smith's Belt Fastener	30%
	Bristol's Belt Lacing	60%
323	Belt Fasteners—	
	Standard Malleable	50-10%
	Standard Steel	40%
	Kenehan	40%
324	Rainbow Packing lb.	$0.55
325	Wire Inserted Rainbow Packing lb.	.70
	Germane Packing	.85
	Wizard Superheat Packing	.85
	Pure Gum Sheet Packing	.50
326	Rainbow Gaskets, 3/32" thick	$1.10
	1/8" to 1/8" thick	1.00
	3/16" to 1/4" thick	.90
	Rings	25%
	C. I. & C. B. S. Gaskets	40%
	Rain-Besto Gasket	33⅓%
327	Eclipse Gaskets lb.	$0.75
328, 329	Peerless Packing lb.	.75
330	Success Packing	.80
331	Hercules Packing	1.25
	Honest John Packing	.80
332	Peerless No. 6 Hot Water Packing	1.00
	Peerless Special Canvas Pump Packing	.60
	Standard Piston Packing	.40
	Rubber Back Packing	.55
	Braided Flax Packing, Best Quality	.40
	Braided Flax Packing, XX Quality	.30
	Lakeside Spiral Packing	.65
	Wizard Wicking	1.00
333	Peerless Expansion Ring Packing	1.25
	Arctic Ammonia Ring Packing	1.20
	Wizard Ring Packing	1.50
334	Peerless Packing in Rings—	
	Style 1, 3 and 4 lb.	1.00
	Style 2	1.20
	Packings—	
	Garlock Spiral lb.	.80

PAGE		PRICE
334	Garlock Rings	$1.00
	PPP	.80
	PPP Special	1.00
	Eureka	.45
	Empire	.40
	Metallic Asbestos	.65
	Selden's Canvas Core	.60
	Selden's Rubber Core	.80
	Goodsell's Rubber Back Flax	1.25
	Goodsell's Dollar	.90
	Goodsell's Sleeve	1.50
	Palmetto	.80
	Vulca Beston, 1/8"	1.25
	Vulca Beston, 1/8" and Larger	1.00
	Rawhide	1.50
	Pure Gum Piston	.60
	Hemp Packings—	
	A, Italian, 25 and 50 lb. Coils .....12, Less	.15
	B, Italian, 50 lb. Coils .11, Less	.14
	A, American, 50 and 100 lb. Coils .....09½, Less	.12
	B, American, 50 and 100 lb. Coils .....08½, Less	.10
	Jute, 100 lb. Coils.05, Less	.06
335	Rainbow Gauge Glass Rings, gross lots .....20% Less	Net
	Gilbert's Gauge Glass Preserver	20%
	Wagon Springs	Net
	Band Saw Rubber	25%
	Hose Washers	20%
	Bumpers	25%
	Peerless Discs	40%
336	Pump Valves	35%
	Valve Springs, doz. lots	10%
	Less advance list	10%
337	Water Hose—	
	Perfected, 50 ft. Lengths 40%, Cut	35%
	Peerless	45%
	Lakeside	50%
	Huron	50-5%
	Sterling	60%
339	Steam Hose—	
	Perfected, 50 ft. Lengths, 40%. Cut	35%
	Knicker	50%
	Lakeside 50-10%	
	Brewer's Hose—	
	Perfected, Red, 50 ft. Lengths	40%
	Peerless, White, 50 ft. Lengths	50%
	Lakeside, Black, 50 ft. Lengths 50-10%	
	Air Brake Hose, Perfected	40%
	Air and Steam Drill Hose—	
	Perfected	40%

PAGE		PRICE
339	Lakeside 50-10%	
340	Anaconda Engine and Tender Hose Connection—	
	Hot Water	40%
	Cold Water	50%
	Hot Water Hose—	
	Perfected	40%
	Perfected, Cut Pieces	35%
341	Perfected Pneumatic Hose	50-10%
	Peerless Acid Hose	

CORRECTED LIST

Internal Diam.		⅛ in. Tube Per Ft.	⅜ in. Tube Per Ft.	¼ in. Tube Per Ft.
¾",	4-ply	$1.50	$1.80	$2.20
1",	4-ply	1.90	2.20	2.80
1¼",	4-ply	2.20	2.75	3.40
1½",	4-ply	2.65	3.30	4.00
1¾",	4-ply	3.10	3.80	4.60
2",	4-ply	3.55	4.35	5.20
2¼",	4-ply	4.00	4.90	5.80
2½",	4-ply	4.40	5.40	6.40
3",	4-ply	5.30	6.40	7.60
3½",	4-ply	6.15	7.40	8.80
4",	4-ply	7.10	8.45	10.00

5 and 6-ply at an advance, 25% and 50% respectively.
No. 1 Quality, Net List.
No. 2 Quality, 50%.

342	Peerless Steel Clad Suction Hose	40-10%
	Smooth Bore Suction	60-10%
	Hard Rubber Suction	40-10%
	Small Suction	40-10%
	Agricultural Suction	75%
343	Rubber Fire Hose—	
	Perfected	10%
	Peerless	20%
	Lakeside	30%
	Landing Pads	20%
344	Winding Hose—	
	Round Wire	70%
	Oval Wire	60%
	Wire Braid	50-10%
	Marline	50%
345	2½" Cotton Rubber Lined Fire Hose, Complete with Automatic Couplings—	
		Net Per ft.
	Eureka	$1.20
	Paragon	1.10
	Red Cross	1.00
	Monitor Double Jacket	.95
	Peerless Double Jacket	.90
	Surprise Double Jacket	.90
	Eagle Double Jacket	.85
	Trojan Double Jacket	.80
	Uncle Sam Double Jacket	.75
	Pioneer Double Jacket	.70

PAGE PRICE

345 Cotton Rubber Lined Hose complete with couplings—

Net, Per Foot

	2½"	2"	1½"	1¼"	1"
Pioneer	$0.31	$0.26	$0.20	$0.18	$0.16
Trojan.	.34	.28	.22	.20	.17½
Eureka.	.40	.34	.26	.24	.21
U. S. Underwriters	.55	.50	.45		

346 Linen Hose without couplings—

Net, Per Foot

	2½"	2"	1½"
Worthy Underwriters	$0.15	$0.13	$0.11
Trade	.12½	.11½	.09½
Red Ball	.10	.09	.08
Per Set Extra for Couplings	1.50	1.25	1.00

Net, Per Foot

	1¼"	1"	¾"
Worthy Underwriters	$0.09½	$0.08	$0.07
Trade	.08½	.06¾	.05¾
Red Ball	.07	.06	.05
Per Set Extra for Couplings	1.00	.75	.50

347 Cotton Rubber Lined Garden Hose, Coupled—

Net, Per Foot

	½"	¾"
Eureka	$0.11	$0.13
Trojan	.09	.11
Pioneer	.08	.10

Rubber Tubing, Pure.....60-10%
Gas Bags, Sizes up to 5"....Net
Gas Bags, 6" and Larger....20%
348 Hydraulic Mining Hose, Triple Sewed.....Market
Seamless Cotton Hydraulic Hose.....10%
Seamless Cotton Conducting Hose.....25%
349 Automatic Ring Hose Couplings.....35%
Automatic Ring Expander..5%
Hose Couplings.....60%
Steam Hose Couplings.....65%
Air Drill Hose Couplings....35%
350 Sherman's Hose Clamps....60%
Caldwell's Hose Strap.....60%
Patent Hose Strap Fastener.70%
Improved Swivel Handle Play Pipe.....40%
Underwriters' Play Pipe.....50%
Hose Pipe with Cock.....50%
Hose Pipe, Screw Tip.....60%
Stub Nozzles.....60%
Gem Hose Nozzles, ¾"..doz. $3.50
Gem Hose Nozzles, 1"..doz. 9.00

PAGE PRICE

350 Magic Hose Nozzles, ¾" doz. $3.50
Magic Hose Nozzles, 1"..doz. 7.00
351 Sprinklers—
Blake .....doz. 3.00
Evanston .....doz. 3.50
Preston .....doz. 9.00
Cyclone .....doz. 10.00
The Ring .....doz. 6.00
Midget .....doz. 7.00
The Golf .....doz. 18.00
Hartford 30%
Putting Green 30%
352 Common Spanner 30%
Spanner and Hydrant Wrench Combined ....doz. 3.00
Reversible Spanner .....doz. 2.50
Siamese with Patent Swivel Attachment 30%
Hose Valves 60%
Hose Nipples, Male and Female 50%
Hose Nipples, Male..... 60%
Neely's Hose, Leak Stop.... 10%
Hose Menders, Wood, ½" per Hd. ..... .35
¾" per Hd..... .40
Hose Mender, Iron 60%
Hose Mender, Brass..... 30%
Single Hydrant Gates..... 25%
Hose Caps, ¾" to 1½"..... 60%
Hose Caps, 1½" to 2½"..... 50%
Hose Reducers 50%
353 Hose Reels, Iron and Wood Frame 35%
Jumper and Cart 30%
354 Hose Reels 30%
355 Eclipse Hose Rack..... 25%
Hump Swinging Hose Rack. 30%
Fire Extinguisher..... 33⅓%
356 Garden Reels, K. C. No. 1... 25%
Tubular, All Metal..... 30%
Park Reel 30%
357 Asbestos Wicking and Rope .....lb. $0.25
Building Felt, Rolls.....lb. .04
Building Felt, Less than Rolls .....lb. .06
Cement Felting.....cwt. 1.25
Mill Board .....lb. .06
Asbestos Pipe Coverings and Fittings—
Perfection, ½" thick..... 80%
Eureka, ¾" thick..... 75%
W. B., 1" thick..... 70%
Asbestos, 1" thick..... 75%
Hair Felt, Rolls 15%
Hair Felt, Cut ..... Net
358 Peerless Rubber Matting.... 40%
Peerless Perforated Matting. 35%
359 Rubber Boots 15%
Wading Pants and Boots.... 10%

PAGE		PRICE
359	Rubber Gloves and Mittens..	20%
360	Rubber Clothing	Net
361	Yacht Clothing and Shoes...	Net
	Covers, Respirator and Goggles	20%
	Rubber Horse Covers and Buggy Aprons	10%
	Rubber Aprons and Ground Blankets	10%
362-365	Oiled Clothing	Net
366-371	Files—	
	Black Diamond and Nicholson 70-10%	
	K. and F. 75-10%	
367	Colton File Card.....	20%
372, 373	Saws	50%
374	Cross Cut Saws—G. B. C.	50%
	Cross Cut Saw Handles.....	30%
	One Man Saws, G. B. C.....	50%
	Hand Saws—	
	No. 8 and No. 10.....	20%
	Bay State	30%
	King Philip	35%
	Compass Saws	20%
375	Hack Saws—	
	No. 10	60%
	No. 30	50%
	Rail	30%
	Hack Saw Blades, G. B. C.—	
	Gross Lots	50%
	Doz. Lots	40%
	Less	30%
	Hack Saw Blades, Star—	
	Gross Lots	40%
	Doz. Lots	30%
	Less	20%
	Power Blades—	
	Gross Lots	40%
	Doz. Lots	30%
	Swage Bar and Hammer....	10%
	Silver Solder	25%
	Marvel Power Hack Saw, No. 1	10%
	Saw Gauge	10%
	Swage or Upset	10%
	Saw Sets	10%
376	Saw Tools—	
	Morrill's Pattern, up to No. 4	50%
	Morrill's Pattern, No. 5...	40%
	Tabor Speed Indicator....	15%
	Standard Speed Indicator.	50%
	V. P. Shaft Speed Counter	10%
	Knives	25%
377	Flint and Emery Paper, per Ream, or Roll.....50-10%	
	Flint and Emery Paper, Less Quantity	50%
	Garnet, per Ream or Roll...	25%
	Garnet, Less	10%

PAGE		PRICE
377	Emery Powder—	
	10-lb. Cans .....lb.	$0.07
	Less .....lb.	.10
378	Detroit Emery Wheels, $3.00 list and Less.....60-10%	
	Detroit Emery Wheels, Over $3.00 list 70-10%	
379	Detroit Emery Wheel Grinder	Net
	Huntington Emery Wheel Dresser .....ea.	.50
	Extra Cutters, per set.....	.10
	Black Diamond Hand Tools.	Net
	Canvas Buffing and Polishing Wheels .....On application	
380	Crown Grinders	50%
381	Crown Countershafts	50%
	Crown Columns	50%
	Saw Gummers	50%
382	Grindstones, Not Mounted—	
	30 lbs. and under...per ton	$25.00
	30 lbs. to 200 lbs....per ton	26.00
	200 lbs. and over...per ton	30.00
	Samson Grindstones—	
	No. 1 .....ea.	3.50
	No. 2 .....ea.	3.25
	No. 3 .....ea.	3.15
	Bi-Treadle Grindstones	35%
	Hand Grindstones	Net
	Wood Frame Grindstone....	10%
583	Keystone Grindstone	10%
	Detachable Grindstone Fixture	Net
	Jackson Grindstone Truing Device	Net
384	Gem Diamond Grinder.....	15%
	Sparkler	15%
	Rapid Grinder	20%
385	Torrid Torches	20%
	Torrid Furnace	15%
	Plumber's Furnace	20%
	Torrid Square Furnace.....	15%
386	Babbitt Metal .....Market	
	G B C Special.....lb.	$0.16
	Magnolia Metal .....lb.	.25
	Monarch .....lb.	.25
	Lead and Tin .....Market	
	Solder .....Market	
	Randall Graphite Sheet Lubricator	25%
	Melting Ladles	40%
	Spring Steel Sewer Rod....	45%
	Soldering Coppers	45%
	Melting Pots	45%
	Plumber's Force Cups.....	50%
387	Crucibles	25%
388, 389	Dixon's Graphite Lubricants	Net
	Except Graphite Cup Greases	10%
390	Albany Grease .....lb.	$0.18
	Arctic Cup Grease	10%
	Tallow .....Market	

PAGE		PRICE
390	Dixon's Axle Grease—	
	1 lb. Tins .....ea.	$0.12
	2 lb. Tins .....ea.	.20
	10 lb. Tins .....ea.	1.20
	25 lb. Tins .....ea.	2.50
	50 lb. Tins .....ea.	4.75
	100 lb. Tins .....cwt.	8.50
	½ Bbl. and Barrels.....lb.	.08
	Frazer's Axle Grease.....	20%
391	Waste .....Market	
	Rags	Net
	Friction Board, Granite..lb.	$0.05½
	Friction Board, Davy....lb.	.06½
	Red Vulcanized Fibre Board, Less than 25 lbs.....lb.	.35
	Red Vulcanized Fibre Board, Over 25 lbs. .....lb.	.26
392	Avery Traction Engine	On application
393, 394	Link Belt and Attachments 50-10%	
395, 396	Sprocket Wheels	50%
397	Acme Buckets	60%
	Empire, Tin .....1910 List	50%
	Empire, Iron .....1910 List	45%
	Mosher Bag Holders.....	45%
398	Spur Gearing .....1910 List	40%
399	Wood Split Pulleys.....60-10%	
400	Entire Page	60%
401	Steel Split Pulley.....50-10%	
402, 403 and 404,	Iron Pulleys...50-10%	
405	Master Friction Clutch.....	60%
406	Manila Transmission Sheaves	50-10%
407	Tension Carriages 50-5%	
408	Shafting .....Market	
409	Cold Rolled Steel Squares and Flats .....Market	
410	Solid Sleeve Couplings.....	60%
	Ribbed Compression Couplings	65%
	Flange Couplings	60%
	Safety Collars, 4" and less..	75%
	Safety Collars, Larger.....	70%
411	Ring Oiling Drop Hangers..	60%
412	Wick Oiling Drop Hangers.	60%
413	Hangers	70%
	Side Journal Bearings	65%
414	Common Flat Box	65%
	Standard Rigid Pillow Blocks	65%
	Extension Wall Brackets....	60%
415	Rigid Post Boxes	65%
	Iron Frame Belt Tightener..	40%
	Take Ups	15%
416	Iron Pipe .....Market	
417	Fittings for Wrought Iron Pipe—	
	Cast Iron Elbows, Tees, Crosses, Reducers, Return Bends, Cap, and Lock Nuts	65%

PAGE		PRICE
417	Malleable Iron Elbows, Tees, Crosses, Reducers, Return Bends, Caps and Lock Nuts	70%
	Bushings and Plugs	70%
418	Malleable Unions	70%
	Flange Unions	70%
	Y Bends 60-10%	
	Return Bends 60-10%	
	Couplings, Wrought Iron..	65%
	Couplings, Malleable	70%
	Union Elbows 75-10%	
	Street Elbows	70%
	Four-Way Tees	70%
	Service Tees	70%
	Union Tees 75-10%	
419	Cast Iron Flanges	70%
	Wrought Iron Nipples, Close 75-10%	
	Wrought Iron Nipples, Long 70-10%	
420	Branch Tees 65-10%	
	Hook Plates	70%
	Slotted Angle Flange.....	60%
	Adjustable Wedge	60%
421	Brass Valves—	
	Globe, Standard Grade....	65%
	Angle, Standard Grade....	65%
	Cross, Standard Grade....	65%
	Iron Valves, Brass Trimmings	70%
	Crosby Valve 50-10%	
	Vulcanized Asbestos Disc Valves	50%
	Crosby Spring Seat Valves..	45%
422	Lunkenheimer Regrinding Brass Valves	40%
	Renewo Valves	30%
	Jenkins Bros.' Brass Valves.	50%
	Jenkins Bros.' Discs	10%
	Jenkins Bros.' Iron Body...50-10%	
423	Lunkenheimer Lever Throttle, Brass	50%
	Lunkenheimer Lever Throttle, Iron	55%
	Lunkenheimer Handy Gate, Brass	50%
	Lunkenheimer Handy Gate, Iron	55%
	Throttle Valves	70%
	Duro	25%
424	Gate Valves, Brass.....	70%
	Gate Valves, Iron Body.....	70%
	Iron Foot Valves.....75-10%	
	Butterfly Valves, Brass.....	70%
	Butterfly Valves, Iron.....65-10%	
	Safety Valves, Brass.....70-10%	
	Safety Valves, Iron.....65-10%	
425	Check Valves	65%
	Jenkins Bros.' Check Valves.	50%
	Jenkins Bros.' Swing Check Valves	45-5%

PAGE PRICE

425 Brass Check Straightway Swinging Ash Discs 45-5%
Lunkenheimer Regrinding Swing Check Valves..... 45%
Lunkenheimer Ball Check Valves 50%
426 Lunkenheimer Clip Gate Valves—
Iron Body 45%
All Iron 40%
Lunkenheimer Victor Gate Valves, Iron Body..... 50%
Jenkins Bros.' Y Valves—
Brass 40-10%
Iron Body 50%
Standard Expansion Joints.. 65%
427 Steam Cocks—
Flat Head, Square Head, T Handle, Three Way..... 70-5%
Vulcanized Asbestos, Packed 5%
Wrenches 60%
Whistle Valve 70%
Lunkenheimer Regrinding Whistle Valve 60%
428 Bibb Cocks—

NEW LIST.

Size Inches	⅜"	½"
Lever Hdl. Fin. Bibbs, doz..	$21.60	$22.80
Lever Hdl. Fin. for Hose		25.20
T Hdl. Fin.		16.80
	⅝"	¾"
Lever Hdl. Fin. Bibbs, doz..	$30.60	$36.60
Lever Hdl. Fin. for Hose...	33.00	39.00
T Hdl. Fin.	22.80	28.80
	1"	1¼"
Lever Hdl. Fin. Bibbs, doz..	$51.00	$82.20
Lever Hdl. Fin. for Hose...	57.00	91.20
T Hdl. Fin.	54.00	....
	1½"	2"
Lever Hdl. Fin. Bibbs, doz.	$123.00	$210.00
Lever Hdl. Fin. for Hose	135.00	228.00

Discount on Lever Handle 70%
Discount on T Handle.... 65%

Check and Waste Cocks—

NEW LIST.

Size Inches	½"	¾"
T Hdl., Lever Hdl., doz....	$19.20	$26.40
	1"	1¼"
T Hdl., Lever Hdl., doz....	$43.20	$72.00
	1½"	2"
T Hdl., Lever Hdl., doz..	$108.00	$192.00

Discount on Check and Waste Cocks 75-5%

Brass Steam Fittings—
Brass Pipe Fittings (except Unions):
Rough and Finished..... 65%
Unions:
Rough 60%
Finished 45%
Fusible Plugs 70-10%
428 Marine Plugs 25%

PAGE PRICE

429 Air Cocks 75%
Steam Gauge Cocks 60%
Traction Engine Cylinder Cocks 70-5%
430 Scotch Water Gauge Glasses, Genuine Moncreiff—
Size, ½", ⅝", ¾", 24" and shorter
100 Dozen 85-25%
25 to 50 Dozen.....85-15%
10 to 25 Dozen..... 85%
Dozen 80-10%
Less than Dozen..... 80%
Larger and Longer.....50-10%
Chesterton's Gauge Glass Cutter 25-10%
Water Gauges—
No. 1 ..... 75%
No. 1A, 2, 3..... 70%
Lunkenheimer Quick Closing 50-10%
431 Gauge Cocks—
Compression 70%
Mississippi 65%
Lunkenheimer Rotating .. 45%
Excelsior 50-10%
Michigan 20%
432 Steam Gauges—
Single Tube, Iron Case, Brass Ring, 2½" to 5" each $1.25
Single and Double Tube, Balance Sizes and Styles, Iron Case 75%
Single and Double Tube, Balance Sizes and Styles, Brass Case 70%
Illuminated Dial Gauge-Steam Gauge List..... 40%
American Recording Gauge 15%
Syphons for Steam Gauge—
Iron Pipe 70%
Brass 50%
433 Gauge Boards ..... Net
Inspectors' Outfit 10%
Square Case Revolution Counter 30%
Round Case Revolution Counter 25%
434 Safety Valves 80-5%
American Water Relief Valves 75-5%
435 Gardner Steam Separators.. 60%
Fisher Pump Governor..... 30%
Perfection Cellar Drainer... 15%
436 Davis Pressure Regulator... 30%
Davis Steam Trap.....40-10%
Marck Steam Trap..... 15%
437 Gardner Governors—
2½" and Smaller..... 30%
3" and Larger 25%
Exhaust Head 70-10%
438 Reliance Water Columns....50-10%

PAGE		PRICE
438	Combination Gauge	70%
439	Flue Cleaners—	
	Ruggles	25%
	Ingalls	60%
	Combination	30%
	Engineers' Favorite	75-10%
	Flat Steel Wire	85%
	Butman Cleaner Rod	20%
	Red Jacket Flue Blower	50-10%
	Expansion Flue Brush	50-10%
440	Moran Flexible Joint	10%
	Climax Joint Clamp	25%
	Emergency Pipe Clamp	25%
	Mound Scraping Tools	10%
441	Steam Whistle—	
	Common Brass	70%
	Patent Gong	30%
	Single Bell Chime	50%
	Mocking Bird	55-10%
	Frisbie, Steam	45%
	Frisbie, Air	10%
442	Oil Cups—	
	Pioneer	55-10%
	Royal	60%
	Victor	60%
	Crown	60%
	Sentinel	75-5%
443	Automatic Rod	60%
	Shaft Oilers	45%
	Pulley Oilers	25%
	Glasses	10%
444	Grease Cups—	
	Ideal	66⅔%
	Jewel	60%
	Marine	55%
	Tiger	60-5%
	Surety	70%
	Steel	70-10%
445	Michigan Oil Cups—	
	With T and Lever Handle	70%
	Plain Brass and Elbow Shank Oiler	75%
	Plain Glass	75-10%
	Improved Common Sense	70%
	Snap Lever	75%
	Improved Spring Compression	70%
446	Grease Cups—	
	Peerless	75%
	Powell, Iron Painted	50-5%
	Powell, Finished Brass	50%
	Alpha Oil Pump	55%
	Universal Oil Pump	55%
	Felthousen Oil Pump	35%
	McCanna Pumps, Iron Body	50-10%
	Glass Body	45%
447	Lunkenheimer Valves, etc	70-10%
448	Nugent Oiling Device	35%
449	Lubricators—	
	Detroit Double Connection, ⅓ Pt. ea.	$3.75

PAGE		PRICE
449	½ Pt. ea.	$4 15
	1 Pt. ea.	5.70
	1 Qt. ea.	7.70
	½ Gal. ea.	11.25
	1 Gal. ea.	14.50
	Repairs	10%
450	Detroit Single Connection, Brass—	
	¼ Pt. ea. Net	$3.00
	⅓ Pt. ea. Net	3.35
	½ Pt. ea. Net	3.75
	1 Pt. ea. Net	5.10
	1 Qt. ea. Net	7.00
	Repairs	10%
451	Improved Senior Sight-Feed	75%
	Junior Sight-Feed	60-10%
452	Cyclone, ⅓ Pt. ea. Net	$3.25
	½ Pt. ea. Net	3.65
	1 Pt. ea. Net	4.75
	1½ Pt. ea. Net	5.50
	1 Qt. ea. Net	7.00
	½ Gal. ea. Net	10.00
	1 Gal. ea. Net	13.00
	Hot Stuff, ⅛ Pt. ea. Net	2.00
	¼ Pt. ea. Net	2.25
	⅓ Pt. ea. Net	2.50
	½ Pt. ea. Net	3.00
	1 Pt. ea. Net	4.25
	1 Qt. ea. Net	6.00
	Meteor	50-10%
453	Swift's	40%
	Banner	60-5%
	Paragon	55-5%
	Engine, Plain	70-10%
	Engine, with Cock and Tube	65-10%
454	Injectors—	
	Pemberthy	70%
	U. S. Automatic	70%
	Metropolitan	70%
	Leader	70%
455	Ejectors and Jet Pumps—	
	H. D.	80%
	American	75-10%
	Blakeslee's, ¾" to 2"	80-10%
	Blakeslee's, Larger	70-10%
	Bilge Pumps	70-10%
	Water Heaters	40-10%
456	Engineers' Sets, with Round or Oval Tray	50-10%
	Engineers' Sets, Nickel Plated on Brass	40-10%
	Steamboat Sets	50-10%
	Nozzles, Steel	60%
	Nozzles, Brass	40%
457	Oilers, Straight and Bent Spout	75%
	Oilers, Railroad Pattern	60%
	Tallow Pots	60%
	Oil Fillers, Steel	60%
	Oil Fillers, Brass	40-10%
	Perfection Filler Oilers	35%

PAGE		PRICE
458	Oilers—	
	Chace, Tin Bottom	70%
	Chace, Brass Bottom	50%
	Paragon	40%
	Engineers' Drip, 6½" to 12" Spout	40%
	Engineers' Drip, 18" Spout	30%
	Goodwin Hand	60-10%
	Wall's Oil Cans	35%
	Cannon	35%
459	Lamps and Torches	60%
	Everlasting Torches	50%
	Hand Torches	30%
460	Oil Tanks—	
	Acme	30%
	Gasoline	30%
	Weise	30%
	Galv. Iron with Wooden Cabinet	20%
	Pumps	25%
	Waste Cans	25%
	Measures	10%
	Wood Jacket Cans	50%
	Funnels	20%
	Faucet Cans	15%
	Kerosene Cans, Tin	35%
	Kerosene Cans, Galv. Iron	50%

		12 qt.	14 qt.
461	Pails—		
	Standard Galv.	doz. $1.75	$2.00
	Ex. Heavy B'd.	doz. 3.75	4.00
	Extra Heavy	doz. 3.50	3.75
	R'd Bot.	doz. 2.75	3.00
	Galv. with Bail		40%
	Wood Fiber, Regular	doz.	$3.50
	Wood Fiber, R'd Bot.	doz.	4.20
	Horse, Soft	doz.	3.60
	Horse, J. I. C.	doz.	5.50
	Horse, Oak No. 50	doz.	4.75
	Cement, Iron Banded, Extra Heavy	doz.	8.25
	Well Bucket		3.50
	Canvas Bucket		25%
	Rubber Pails	doz.	$30.00
	Rubber Buckets	doz.	19.00
	F. L. Thorpe	doz.	3.60

		Doz. Lots Dozen	Less Quantity
462	Wrenches—		
	Coe's	50-10%	50%
	Standard	80%	70-10%
	Always Ready	60-10%	60%
	Trimo	50-10%	50%
	Turn More	40-10%	35%
	Adjustable "S" Westcotts	40-10%	40%
	Alligator	75-10%	70-10%
463	Little Giant		25%

		Full Boxes	Less
	Stillson Pipe	70-10%	70%
	Extra Parts		65%
	Trimo Pipe	70-10%	70%

PAGE		PRICE
463	Extra Parts	65%
	Vulcan	45%
	Agrippa	45%
464	Drop Forged Steel	
465	Wrenches, Doz. Lots	50-10%
466	Less	50%
467	Wrenches—	
	Parmelee	40%
	Bullard Automatic	40%
	Robbins'	60%
	Tinner Snips, Genuine Wiss—	
	Doz. Lots	50%
	Less	45%
468	Vises, Bench—	
	Parker	25%
	Prentiss Bull Dog	40%
	Clincher	50%
	Prentiss Self-Adjusting	25%
	Woodworker's	20%
469	Vises, Pipe—	
	Parker	60%
	Malleable Iron:	
	No. 1 net, ea.	$1.25
	No. 2 net, ea.	1.50
	No. 3 net, ea.	2.50
	Extra Jaws	30%
	Massey's Perfect	40%
	Vulcan Chain	40%
	Box, 100 lbs. and under	60%
	115 to 125 lbs.	50-10%
	150 to 200 lbs.	50-5%
	Repairs	25%
470	Detroit Tool	10%
	Blacksmiths' Bellows, Standard Pattern—	50%
	Extra Long Grain Leather	50%
	Extra Long Split Leather	60%
	Moulders' and Hand Bellows	40%
471	Screw Plates—	
	Oster	50%
	Extras	10%
	Armstrong, No. 1 and No. 3	70-5%
	Armstrong, No. 6 and No. 7	65-5%
	Extras	65%
	Malleable Iron Pipe Stock—	
	Nos. 0, 3, 4	70-10%
	Extras	70%
	No. 1 to No. 2	75-10%
	Extras	75%
472	Oster No. 17 Geared Die Stock	50%
472-3	Oster Machines, Factory Shipment	25%
474, 475	Green River Screw Plates	35%
476	Extra Parts for Green River Screw Plates	25%
	Lightning Screw Plates	35%

PAGE		PRICE
476	Extra Parts	25%
	Adjustable Tap Wrenches	25%
477	Little Giant Screw Plates	35%
478	Extra Parts	25%
	Armstrong Adjustable Stock and Dies	60-5%
	Machine or Solid Bolt Dies	50-10%
479	Taps—	
	Machinists' Hand, 1/8" to 1½"	65-10%
	Larger	50-10%
	Machine or Nut Taps, Corrected List—	

Sizes	Number of Threads to inch	Whole Length	Each
5/16"	**24**	4½"	$0.60
¼"	16, 18, **20**	5"	.60
5/16"	16, **18**	5¾"	.70
⅜"	14, **16**	6½"	.80
7/16"	12, **14**, 16	7¼"	.90
½"	**12**, 13, 14	8"	1.00
9/16"	**12**, 14	8¾"	1.15
⅝"	10, **11**, 12	9½"	1.30
11/16"	**11**, 12	10¼"	1.45
¾"	**10**	10¼"	1.60
13/16"	**10**	11"	1.80
⅞"	**9**, 10	11 3/16"	2.10
15/16"	**9**	11 11/16"	2.40
1"	**8**	12"	3.15
1⅛"	**7**, 8	12⅝"	3.60
1¼"	**7**, 8	13¼"	4.25
1⅜"	**6**	14"	4.80
1½"	**6**	15½"	5.65
1⅝"	**5**, 5½	16¼"	6.50
1¾"	**5**	17"	7.20
1⅞"	**4½**, 5	17¾"	8.25
2"	**4½**, 5	18½"	9.25
2⅛"	**4½**	18½"	10.80
2¼"	**4½**	18½"	12.25
2⅜"	**4½**	18½"	13.80
2½"	**4**	19"	15.00
2⅝"	**4**	19"	16.80
2¾"	**4**	19½"	18.00
2⅞"	**4**	19½"	19.80
3"	3½	21"	21.60
3⅛"	3½	21"	24.70
3¼"	3½	21"	26.88
3⅜"	3½	21"	28.75
3½"	3¼	21"	31.25
3⅝"	3¼	21"	33.75
3¾"	3	21"	36.88
3⅞"	3	21"	38.75
4"	3	21"	41.88

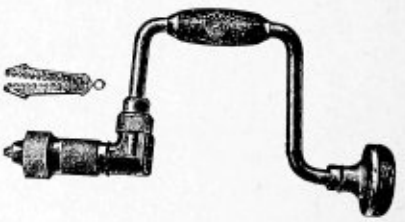
We can furnish the above threads in "V" and United States Standard shapes.

Unless advised to the contrary, we fill orders with "V" form and in threads as indicated in heavy type.

We also keep in stock 1/64 and 1/32 oversize, up to ¾ inch, and 3/32 oversize, up to 1½ inch.

PAGE		PRICE
	In ordering always state exact diameter and thread wanted.	
479	Machine or Nut, 1/16" to 1½"	65-10%
	Larger	50-10%
	Bit Brace	65-10%
	Stove Bolt, doz., 75-10%, less	75%
	Machine Screw, doz., 75-10%, less	75%
480	Stay Bolt	45%
	Pipe Taps and Reamers, ⅛" to 1½"	80, 10 and 10%
	2" and 2½"	80%
	Combined Pipe Tap and Drill	35%
	Mud Plug or Washout Taps	10%
	Patch Bolt	65%
481	Reamers—	
	Bit Brace	40%
	Hand	40%
	Shell	35%
482	Arbors for Shell Reamers	30%
	Taper Bridge Reamers	70%
	Paradox Adjustable Hand Reamers	30%
483	Ratchet Drills—	
	Packer	65%
	Keystone	30%
	Renshaw	45%
	Armstrong	30%
484	Drills—	
	Hand and Breast	25%
	Improved Ratchet Braces	25%

Samson Bit Brace



LIST.

8 in. No. 3203	ea.	$4.00
10 in. No. 3202	ea.	4.35
12 in. No. 3201	ea.	4.65
14 in. No. 3200	ea.	5.00
Doz. Lots		60%
Less	50 and	10%
Plain Bit Brace		40%

PAGE		PRICE
485	Straight Shank	65-10%
	Bit Stock	70-5%
	Taper Square Shank	45%
486	Twist Drills, Taper Shank, to 1½"	65-10%

PAGE		PRICE
486	Twist Drills, Taper Shank, Larger	40-5%
	Straight Shank Wire Gauge	65 and 10%
487	Blacksmiths' Drills—	
	To 1½"	65-10%
	Larger	40-5%
488	Machine Bits	60%
	Wonder Drilling Attachment	50-10%
	Steel Sockets and Sleeves	60%
	Drill and Countersink, Combined	25%
489	Chucks—	
	Almond	30%
	Universal	35%
	Davidson	20%
	Jacobs	35%
	Union	40%
	Independent	35%
	Westcott's	40%
	Westcott Parts	Net
490	Tube Expanders—	
	Roller	80%
	Spring Tube	70%
	Boss	70%
	Pipe Cutters—	
	Barnes' Three Wheel	80%
	Barnes' Three Wheel Parts	70%
	Trimo	65%
	Trimo Parts	60%
	Saunders	75-10%
	Saunders Parts	70%
	Ideal Self-Feed Tube Cutter, 2" to 4"	35%
	Larger	25%
491	McKenzie's Chain Clamp	Net
492	Screw Clamps—	
	Malleable Iron	50-10%
	Boat Clamps	20%
	Ship Carpenter's Clamps	20%
	Billings C Clamp	35%
	Extra Heavy Machinists' Clamp	70%
	Steel Dogs	75%
	Steel Dog Wrenches	80%
493	Boilermakers' Screw Punch	75%
	Extra Punch and Dies	70%
	Forged Steel Screw Punch	40%
	Beading Tools	40%
	Marvel Punch	15%
494	Shears	15%
495	Starrett's Tools, entire page. Except No. 300 and No. 419, Rules	25% 30%
496	Starrett's Tools, entire page. Except Wing Dividers	33⅓% 60%
497, 498	Armstrong Tools and Holders	25%
499	Button's Pliers	30%
	Round Nose Pliers	35%

PAGE		PRICE
499	Cronk's Wire Cutter and Bender	50%
	Gas Pliers	60-10%
	Carolus Nut Splitter and Bolt Clipper—	
	No. 1, Cuts to ⅜" Bolt, Net ea.	$3.50
	No. 2, Cuts to ½" Bolt, Net ea.	4.50
	Pease Combination Pliers	70%
	Flat Nose Pliers	35%
	Side Cutting Pliers	35%
	Klein Lineman's Pliers, "Genuine"	35%
	New Easy Bolt and Rivet Clippers	50-10%
	New Easy Bolt and Rivet Clippers for Electricians	45%
500	Forges, Royal	50-10%
501	Forges, Western Chief	60%
502	Forges—	
	Royal	50-10%
	Buffalo	60%
	G. B. C. Barrel	50%
	Champion	50-10%
503	Buffalo Compressed Air	30-10%
504	Blowers—	
	Royal	50%
	Blast Gates	30%
	Small Pressure	40-10%
	Champion One-Fire	25%
	Champion Electric	20%
505	Post Drills—	
	No. 0½	$4.25
	No. 0	5.50
	No. 00	7.50
	No. 2	11.00
	No. 15 Hand Power	14.00
	No. 15 Hand and Pulley Power	15.50
	No. 7 Hand Power	22.50
	No. 7 Hand Power, with Pulley	24.50
506	Floor Drills—	
	No. 8	24.00
	No. 9	27.00
	No. 17	41.50
	No. 18 Hand Power	28.00
	No. 18 Hand Power, with Pulleys	30.00
507	Anvils—	
	Vulcan	40%
	Peter Wright per lb.	$0.10½
	Swage Blocks per lb.	.03½
	Cones or Mandrels per lb.	.04½
508	Riveting Tongs, 20" ea.	$0.55
	Riveting Tongs, 30" ea.	.70
	Flogging Hammers lb.	.06
	Plugging Hammers lb.	.10
	Riveting Hammers lb.	.20
	Dollies	40%
	Cold Cutters, Rivet Busters.	40%

PAGE		PRICE
508	Rivet Snaps	30%
	Diamond Pointed Chisels	30%
	Old Man	40%
	Backing Out Punches	20%
	Gouges	40%
	Hoisting Clamps	40%
	Drift Pins	20%
	Double Jaw Drilling Post	45%
509	Chisels—	
	Cold	50%
	Machinists' Cape	50%
	Round Nose	50%
	Diamond Point	50%
	Track ....lb.	$0.13
	Punches ....lb.	.13

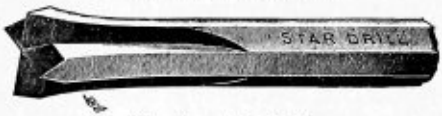
Long Brick Chisels

For Cutting Through Brick Walls

First Quality Octagon Crucible Steel:	
Length 15", Size of Steel ⅝", list, per doz.	$6.00
Length 18", Size of Steel ¾", list, per doz.	9.00
Length 24", Size of Steel ⅞", list, per doz.	16.00
Length 30", Size of Steel 1", list, per doz.	24.00
Discount	50%

Star Drill

For Brick and Stone



They do not Break Here

Use This Drill for Drilling Stone

LIST PRICE PER DOZEN

Length	Dia. of Cutting Edge ¼"	⅝"	⅜"	⅞"	½"
12"	$8.50	$8.50	$8.50	$9.00	$10.00
18"	11.00	11.00	11.00	11.50	12.50
24"	13.50	13.50	13.50	14.00	15.00
	⅝"	¾"	⅞"	1"	
12"	$12.00	$14.00	$16.00	$18.00	
18"	15.00	17.50	20.00	22.50	
24"	17.50	20.00	22.50	25.00	
	1⅛"	1¼"	1½"	1¾"	
12"	24.00	30.00	50.00	75.00	
18"	28.00	35.00	56.00	81.00	
24"	32.00	40.00	62.00	87.00	

PAGE		PRICE
	Prices of Drills of intermediate diameters, same as next size larger. Drills of larger diameter, or greater lengths than listed, furnished to order promptly at proportionate list prices.	
	Discount	50%
510	Sledges and Striking Hammers—	
	5 lbs. and over....lb.	.06
	3 to 5 lbs....lb.	.08
	Mason Hammers—	
	5 lbs. and over....lb.	.09
	3 to 5 lbs....lb.	.10
	Spalling and Hand Drilling—	
	5 lbs. and over....lb.	.07¼
	3 to 5 lbs....lb.	.09
	Mauls—	
	Ship	.08
	Railroad Spike	.06
511	Picks—	
	Railroad, Drifting, Tamping	75%
	Fireman's	60%
	Stone	70%
	Grub Hoes and Mattocks	75%
	Asphalt Mattocks 70-10%	

Double Cutter Asphalt Mattocks

10 lbs., net....doz. $7.00

Asphalt Sandals

Net, per doz. pairs.... $24.00

512	Huntington Standard Track Gauge	10%
	Insulated Circular Track Gauge	10%
	Wooden Track Lever	10%
	McManus Gauge and Level	10%
	Jim Crow Rail Bender	40%
	Ratchet Rail Bender	40%
513	Bars—	
	Crow and Pinch....lb.	$0.03
	Lining ....lb.	.03½
	Shackle ....ea.	2.25

STRUCTURAL TOOLS

STEEL

RIVETING TONGS

20 inches long ....each, $0.75
30 " " .... " 1.00

FLOGGING HAMMERS

5 to 8 lbs... per lb., $0.20

PLUGGING HAMMERS

2 to 3 lbs... per lb., $0.25

RIVETING HAMMERS

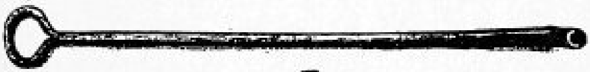
2 to 3 lbs.... per lb., $0.35

STRAIGHT DOLLIES

Each $2.50

OFFSET DOLLIES

Each $2.75

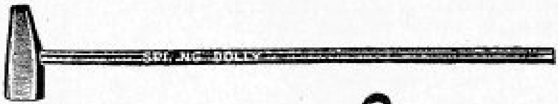


HANDLE DOLLIES

Each $4.25

SPRING DOLLY

Each $7.00



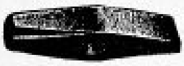
COLD CUTTERS

4 lbs., 1½-inch face......each, $1.00

RIVET SNAPS

Size of Rivet	Each
⅜ inch	$0.90
½ "	.90
⅝ "	1.35
¾ "	1.50
⅞ "	1.75
1 "	2.25

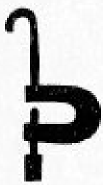
RIVET BUSTERS



4 to 5 lbs.
1½-inch face, each, $1.25

BACKING OUT PUNCHES

Size of rivets, ⅜, ½, ⅝, ¾, ⅞ ..... each, $1.00

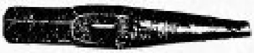


HOISTING CLAMPS

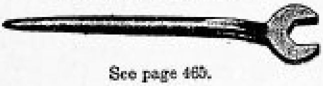
Each .. $6.00

GOUGES

3 lbs. ..each, $1.00



STRUCTURAL WRENCHES

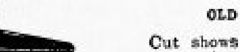


See page 465.

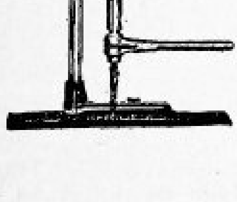
DRIFT PINS

For ½ inch rivets, ... each, $0.14
For ⅝ " " .... " .15
For ¾ " " .... " .17
For ⅞ " " .... " .20

DIAMOND POINTED CHISELS



3 lbs. .... each, $1.00

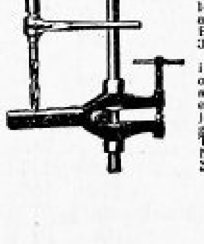


OLD MAN

Cut shows method of operation, including Drill.

Nos.	1	2
Height of post, in.	20	26
Radius of arm, in.	10	12
Price, each,	$8.00	10.00

THE DOUBLE-JAW DRILLING POST



No. 1 is suitable for drilling all size holes up to ¾ inch. Radius of arm 10 inches, weight 25 pounds.

No. 2 is extra strong. Post is long enough to take No. 5 ratchet and drill up to 1½-inch hole. Radius of arm 12 inches, weight 33 pounds.

The jaws of both sizes open 4 inches. Can be made special to open any distance. The screws are made of tool steel and tempered. The screw in the lower jaw has a cup-shaped head, a guide and seat for top screw. The screws can be reversed.

No. 1 .... each, $8.00
No. 2 .... " 10.00

PAGE			PRICE
513	Claw	lb.	$0.06
	Tamping	lb.	05½
	Pointed Digging		25%
	Digging and Tamping		25%
	Rail Forks	lb.	$0.07
	Rail Tongs	lb.	.07
	Aldon Car Replacers		20%
514	Car Movers—		
	Samson	ea.	$3.50
	Samson Locomotives	ea.	4.25
	Samson Repairs		30%
	Rowell	ea.	3.50
	Rowell Repairs		30%
	Sheldon	ea.	$2.50
	Sheldon Repairs		25%
	Champion	ea.	$2.50
	Champion Repairs		25%
	Easy	ea.	$3.50
	Easy Repairs		20%
	Special		4.00
515	Blacksmiths' Tools—		
	Tuyer Irons, Duck's Nest.		25%
	Tuyer Irons, Clark		30%
	Swages, Chisels, Fullers, Flatters, Set Hammers and Hardies	lb.	$0.13
	Tongs, Flat	lb.	.11
	Tongs, Bolt	lb.	.17
	Pincers		40%
	Farriers' Knives		30%
516	Plumbers' Tools		50%
	Asbestos Lead Joint Runners		35%
517	Lead Melting Furnaces and Tar Melters		15%
	Salamanders		25%
518	Tar Pails and Buckets		15%
	Pay-off and Carrying Pails		10%
519	Steel Tampers		60%
	Groover, Edger, and Steel Tuck Pointers		50-10%
	Sidewalk Roller		60%
	Trowels		50%

		Dozen Lots	Less
520	Hatchets	50%	40-10%
	Axes, Single Bit	$5.00	$5.50
	Axes, Double Bit	7.00	8.00
	Axes, Handled, Niagara	6.00	7.00
	Axes, Fire with Pick	12.00	13.50
521	Adzes	Standard	White's
	Carpenters'	35%	15%
	Railroad	40%	15%
	Shipbuilders'	40%	15%
	Wood Choppers' Mauls	lb.	$0.07½
	Wedges, Truckee	lb.	.07½
	Wedges, Square Head	lb.	.04½
	Wedges, Saw		40%
	Mauls, Bark Covered		30%

Sewer Builders' Mauls

PAGE			PRICE
521	5x 9 inches	ea.	$3.20
	6x 9 inches	ea.	3.50
	7x10 inches	ea.	3.85
	8x10 inches	ea.	4.25
	Discount		45%

		Dozen Lots	Less
522	Hammers		
	Engineers'	60-5%	50-10%
	Riveting	50-10%	50%
	Farriers'	50-10%	50%
	Blacksmiths' Hand	60%	55%
	Nail	60%	55%
	Invincible	40%	35%
	Machinists' Ball Pein.	70%	65%
	Machinists' Gross Pein	65%	60%
523	Handles—		
	Full Crates		60-10%
	Less Quantity		60%
	Except File Handles	doz.	$0.15
524	Ship Augers—		
	Dozen Lots Assorted		50%
	Less Quantity		45%
	Pratt's Ratchet Auger Handle		10%
	Boring Machines	ea.	$3.25
	Auger Handles		45%
	Pratt's Patent Auger Handle		10%
	Boring Machine Augers		75%
	Clark's Expansive Bits		65%
	Extra Cutters for Same		50%
	Rafting Augers		40%
	Carpenters' Nut Augers		75%
	Ship Auger Bits		50%
	Auger Bits, Jennings' Pattern		65%
525	Chisels, Socket Firmer		80%
	Chisels, Framing		65%
	Chisels, Carpenter Slicks and Paring Gouges, White's		40%
	Yankee Automatic Drill		45%
	Bailey's Iron Spoke Shaves		45%
	Carpenters' Draw Knife		70-10%
	Timber Scribes		25%
	Marking Gauges		40%

		Dozen Lots	Less
	Screw Driver	70-10%	70%
	Perfect Handle Screw Driver	50%	40%
	Screw Driver Blades		60%
	Goodell's		50-10%

PAGE		PRICE
		Dozen Lots / Each
525	Hollow Handle Awl and Tool Set—	
	No. 1	$4.00 / $0.50
	No. 2	3.00 / .40
	No. 3	8.00 / .90
526	Planes, All Iron	50-10%
	Levels	50%
	Wood Planes	30%
	Plumb Bobs	30%
	Plumb Bobs, Adjustable	20%
527	Entire Page	15%
	Except Bench Screws	30%
528	Rules—	
	Boxwood	50%
	Caliper	50%
	Ship Carpenters'	50%
	Blacksmiths'	50%
	Sliding T Bevel	20%
	Zigzag	40%
	Steel Squares	75%
	Try Squares	Net
529	Tapes—	
	Reliable	30%
	Chesterman Metallic	25%
	Chesterman Steel	30%
	Challenge	30%
	Rival	30%
	Lufkin Improved Metallic	30%
	Sterling	30%
	Ass Skin	35%
	Patent Leather	30%
530	Patent Rawhide Mauls	Net
	Patent Hide Faced Mallets	15%
	Solid Rubber	40%
	Sailmakers' Mallets	Net
	Copper Hammers	5%
	Hickory and Lignum Vitæ	15%
531	Velocipedes	40%
532	Push Cars	40%
533, 534,	Industrial Railways, On Application	
535	Trucks	10%
536	Plows	10%
537	Drag Scrapers—	
	Haslup	40%
	G. B. C.	40%
	Columbus, No. 1	$5.50
	Columbus, No. 2	5.25
	Columbus, No. 3	5.00
	Runners, extra	.35
	Double Bottom, Extra	.40
	Tongue Scrapers, No. 1	6.25
	Tongue Scrapers, No. 2	6.00
538	Doan Ditching Scraper	30%
	Western Wheel Scraper, No. 1	35%
	Automatic End Gates	20%
	Western Wheel Scraper, No. 2	30%
	Extras for Same	20%
539	Wheelbarrows—	Dozen Lots / Less
	Tubular Steel	65% / 60-10%
	Pan American	$35.00 ea. / $3.25

PAGE		PRICE
		Dozen Lots / Less
539	Coal Barrow with 2 Wheels	45%
	No. 100	$36.00 / $40.00
	No. 110	35.00 / 40.00
	No. 115 Concrete	45.00 / 50.00
	Steel Charging	25%
		Each
540	Bronson, No. 3	14.50 / 1.35
	Bronson, No. 4	15.75 / 1.50
	Champion, Jr., No. 14	16.75 / 1.60
	Champion, Jr., No. 15	19.00 / 1.75
	Champion, No. 74	19.00 / 1.75
	No. 75	20.00 / 1.85
	No. 76	26.50 / 2.50
	No. 77	20.00 / 1.85
	Champion Wood Mortar, No. 35	31.00 / 2.85
	Champion Steel Mortar, No. 37	40.00 / 3.75
	Champion Stone, No. 40	40.00 / 3.75
	Garden, No. 20	27.00 / 2.50
	Sawdust, No. 6	/ 8.50
	Sawdust, No. 7	/ 11.50
	Wheels, No. 1 Steel	8.00 / .75
	Wheels, No. 2 Steel	13.50 / 1.30
	Wheels, Wood	7.00 / .70
541	Shovels and Spades—	
	Carpenters' Brand	40-10% / 40%
	Peerless	40% / 35%
	Eclipse	30-10% / 30%
	Success	30-10% / 30%
542	Scoops—	Dozen Lots / Less
	Carpenters'	40-10% / 40%
	Ames	10% / Net
	Hercules Grain	50%
	Champion Flour	40%
	Hods	40%
543	Snow Shovels—	Dozen
	1 piece long handle	$3.75
	1 piece, D Handle	4.75
	Steel Point, No. 1	2.75
	Steel Point, No. 01	3.00
	Mortar Hoes, Open Blade	6.50
	Mortar Hoes, Solid Blade	6.00
	Forks—	Dozen Lots / Less
	Coke and Coal	35% / 30%
	Heavy Stone	35% / 30%
	Shaving	35% / 30%
	Stone Hooks, 9x6", Round Teeth	doz. / $6.25
	Stone Hooks, 9x10" Flat Teeth	doz. / 8.50
	Stone Rakes	doz. / 7.00
544	Screens—	
	Oak Frame and Challenge	30%
	Sand	45%
	Riddles	50%

THE PEERLESS HOIST

Spur Geared

Highest Efficiency. Single Chain to 6,000 Pounds Capacity

Capacity in pounds	Regular Lift, in feet	Price of Hoist, Regular Lift	Price of Extra Lift, per foot	Minimum Distance Between Hooks, in inches	Weight of Hoist, in pounds	Pull on Hand Chain to Lift Full Load, in pounds	Feet of Chain Handled to Lift Load, one foot	Number of Strands of Load Chain
500	8	$30.00	$0.85	13	46	50	14.0	1
1,000	8	35.00	.90	14	52	64	20.3	1
2,000	8	45.00	.95	16	80	81	31.5	1
3,000	8	60.00	1.00	19	112	114	34.5	1
4,000	9	70.00	1.05	22¼	151	124	40.5	1
6,000	10	90.00	1.25	24	226	130	59.0	1
8,000	10	110.00	1.60	29	227	128	81.0	2
10,000	12	140.00	2.00	32	320	112	118.0	2
12,000	12	165.00	2.00	34½	335	134	118.0	2
16,000	12	200.00	2.75	39¾	435	125	177.0	3
20,000	12	240.00	3.20	42	482	181	154.5	3
30,000	12	340 00	4.60	56½	1012	208*	103.0*	4
40,000	12	425.00	6 40	67	1400	186*	154 5*	6

* On each hand chain.

PAGE		PRICE
544	Extension Chute	Net
545	Dynamite	On Application
		Full Pkgs. / Broken Pkgs.
546	Iron Set Screws	75-10-5% / 75%
547	Iron Cap Screws	70-10-5% / 70%
548	Iron Machine Screws, with Rolled Thread	75% / 70-10%
	Brass Machine Screws with Rolled Thread	70%-65%
548A	Spring Cotters, Kegs and Full Packages	90-45%
549	Wood Screws—	
	Flat Head, Bright, Full Pkgs.	87½-7½%
	Round, Head Blued	85-5%
	Flat Head Galvanized	Market
550	Brass Flat Head	80-5%
	Brass, Round Head	77½-5%
551	Coach and Lag Screws	Market
	Stud Bolts	65%
552	Machine Bolts	Market
553	Carriage Bolts	Market
554	Bolt Ends	Market
	Union Tire Bolts	Market
	Bridge Bolts	On Application
	Track Bolts	Market
555	Stove Bolts	Market
	Boiler Patch Bolts	35%
		Full Pkgs. / Broken Pkgs.
	Elevator Bolts	70% / 60%
	Planer Head Bolts	25%
556	Nuts—	
	Hot Pressed and Cold Punched	Market
	Semi-Finished	Market
	Finished, Case Hardened	Market
557, 558	Iron	Market
559	Steel	Market
560	Nails	Market
	Spikes	Market
561	Railroad Spikes	Market
	Drift Bolts	On Application
		Black / Galv.
	Shingle Bands, Bbl. Lots	lb. .03 / lb. .04
	Shingle Band Nails, "C," 100 lb. Kegs	$4.75
562	Nails	Market
	Horse Shoes	Market
	Steel Toe Calks, Blunt, 25 lb. boxes	Less lb. $0.05 / lb. .06
	Steel Toe Calks, Sharp 25 lb. Boxes	lb. .06 / lb. .07
	Horse Shoe Nails—	
	Capewell, 25 lb. Boxes	10% Net
	Coleman	10% Net
	Au Sable	50% 30%
563	Norway Rivets	75%
	Boiler Rivets	Market

PAGE		PRICE
563	Cast Iron Washers	lb. $0.02¼
	Wrought Iron Washers	Market Less
	Black Clinch Rings, 100 lb. Kegs	lb. $0.07 / $0.10
	Corrugated Steel Fasteners, Pkgs.	50-5% / 40%
564	Copper Cut Boat Nails, Full Pkgs.	lb. .21 / .23
	Copper Wire Nails, Full Pkgs.	lb. .21 / .23
	Copper Boat Tacks, Full Pkgs.	lb. .25
	Swedes Iron Tacks, Full Pkgs.	90-25%
565	Wood Ice Tools	10%
565A	Thor Pneumatic Tools on application.	
565B	Willey Electric Tools	5%
566	Trucks, Warehouse and Store	50-10%
	Trucks, Box	50%
	Skids	50%
567	Wagon Trucks	50-10%
	Baggage Barrows	40%
	Express and Baggage Barrows	40%
568	Harness	30%
569	Straps, Halters, etc	35%
570	Wakefield Traces and Martingales	33⅓%
571	Truck Traces	35%
	Sweat Pads and Collars	35%
572	Rings, Buckles, and Snaps, Full Pkgs., 40%; Broken Pkgs.	30%
	Balance of Page	10%
573-5	Paints, Varnishes—Send for New List.	
575	Dixon's Silica Graphite Paint:	
	Barrels, per gallon	Net $1.50
	½ barrels, per gallon	Net 1.55
	10 gallons, per gallon	Net 1.65
	5 gallons, per gallon	Net 1.80
	1 gallon	Net 1.85
	G. B. C. & Co.'s Smoke Stack Paint:	
	1 gallon	Net 1.50
	½ gallon	Net .80
	¼ gallon	Net .45
	G. B. C. & Co.'s Aluminum Smoke Stack Paint:	
	1 gallon	Net 3.00
	½ gallon	Net 1.55
	¼ gallon	Net .80
		Doz. Lots
577, 578	Brushes	65% Less 55%
579	Brushes and Dusters	20% 10%
580	Brushes, Steel Wire Casting	35%
	Brushes, Hand Scratch	40% 30%

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BUCKEYE CARBIDE LIGHTS.

Nos. 2, 3, 5.

No. 55.

Burning Capacity 10 Hours.

Size No.	Candle Power.	Estimated Cost per Hour.	Each.	Extra, Fitted with Long Beam Reflector.	Net Wt. Each, Lbs.
2	1000	$0.03	$ 48.00	$ 6.00	60
3	3000	.04	66.00	7.50	65
5	5000	.06	75.00	7.50	75
55	10000	.12	120.00	15.00	90

Discount 20%

No. 700

GASOLINE AIR PRESSURE LAMPS.

For Outdoor.

500 candle power. Capacity 2 quarts. Burning capacity 10 hours.

Each $16.00

Discount 30%

	Dozen Lots.	Less.
Torches		
Single Burner	$10.00 each.	$1.00
Double Burner	18.00 each.	1.75

Portable Lights B and W. Do not carry.

PAGE		PRICE
580	Capital Brooms..doz. $4.00 ea.	$0.40
	Corn Brooms ..doz. 4.00 ea.	.40
	Push Brooms, Extra Cane 40%	20%
	Push Brooms, Coir.40%	20%
	Push Brooms, Steel Wire 40%	20%
	Star Painting Machines.....	20%
	Pneumatic Painting Machines .....Not	made
581	Mill Lamps	35%
	Station and Engine Room Lamps	35%
	Head Lights, R. R. Pattern..	35%
	Head Lights, Motor	40%
	Bridge Signal Lamps	35%
	Tubular Headlights	30%
582	Tubular Street Lamps	35%
	Bull's Eye Lantern	35%
	Note Change in List Prices	
	Tin, Japanned—	
	Flash .....doz.	$12.00
	Regular .....doz.	10.00
	Brass .....doz.	42.00
	Dozen Tubular Lanterns Lots	Less
	Crown .....$4.75 ea.	$0.50
	Victor ..... 5.00 ea.	.60
	Monarch ..... 5.00 ea.	.60
	Vesta ..... 9.50 ea.	.90
	Blizzard Cold Blst. 7.50 ea.	.70
	Blizzard Cold Blst. ex. large Font.. 9.50 ea.	.90
	Blizzard Cold Blst. with Copper Ft.10.50 ea.	1.00
	For Colored Globes Red, Green and Blue, add to above, per dozen 2.00	.25
	No. 0 Globes, only, White, Case Lots 5 dozen, per doz. .40	Less .60
	Blizzard Globes, only, White, Case Lots 5 doz. per doz. .60	Less .80
583	See page 28 in this Guide.	
584	All Burners	30%
	Reflectors	30%
	Flash Lights	10%
	Lamp Wicks, Gross Lots...	30%
	Less than Gross, Net to...	10%
	Lamp Chimneys	10%
585	Lanterns, Lake and River...	20%
	Lanterns, No. 39 Railroad	Corrected List. See Marine Catalog.
	Steamer Signal Lamps, "Buffalo" Pattern ...	
586	Side Lights	
	Bow Lights	
	Anchor Lights	
	Lens only on above....	

PAGE		PRICE
587	Compass—	
	Ritchie Spirit	25%
	Bliss Liquid	25%
	Baker's Oil	25%
	Tell Tale	Net
	Wood Box	5%
588	Binnacles—	
	Tripod	5%
	Mahogany Centre	5%
	Binnacle Heads ..... Mahogany Desk	Corrected List. See Marine Catalog.
	Bliss Taffrail Log	15%
589	Aneroid Barometers	10%
	Pocket Compass	30%
	Thermometers	20%
	Parallel Rules—	
	Ebony	25%
	Rubber	Net
	Note change in List.	
	No. 513A 6-inch.....	$0.75
	Wing Dividers	Net
590	Marine Glasses	15%
591	Chelsea Marine Clocks. Marine Clocks ..... Folding Lavatory ..... Marine Closets	Corrected List. See Marine Catalog.
592	Fenders, Netted Rope, Cork Filled	Net
	Fenders, Round Sennet	15%
	Ring Buoys	20%
	Life Preservers, Block Cork, each	.90
	Life Preservers, Never Sink Jackets .....ea.	1.50
	Metallic Life Boats..On Application	
	Automatic Boat Plugs.....	40%
	Life Rafts .....On Application	
593	Bells, Genuine Bell Metal...	Net
	Bell, with Stationary Bracket	25%
	Bells, with Detachable Bracket	25%
	Bells, with Stationary Side Bracket	25%
	Lothrop's Fog Horns.....	Net
	Fog Horns, Tin and Brass..	10%

Corrected List—

Length,	14"	20"	24"
Tin, per doz.....	$4.75	$5.00	$5.62
Brass, per doz..		10.00	11.50
Length,	30"	36"	40"
Tin, per doz.....	$6.25	$7.50	$9.38
Brass, per doz..	13.50	15.00	17.00

PAGE PRICE

593 Hand Launch Whistles—

NET LIST, EACH.

No.	Dia., In.	Length, In.	Single-Tone ea.	Three-Tone Chime, ea.
0	3	13	....	$3.00
1	4	15	$3.25	3.75
2	4	20	5.75	6.10
3	2½	21	3.50	....

594	Trip Gongs, Doz. Lots, Assorted 50%.....Less	40%
	Jingle Bells	30%
	Bell Springs	10%
	Bell Cranks	30%
	Bell Pulls	20%
	Post Bell Pulls	15%
	Steel Bells, Style No. 1.....	50%
	Steel Bells, Style No. 2.....40-10%	
595	Brass Yacht Cannon and Ammunition	Net
	Megaphones, Stentor	10%
596	Oars, Ash, Plain, Base 6 to 10' .....per ft.	$0.09
	Oars, Ash, Copper Tipped, Base 6' to 10'.....per ft.	.09½
	Oars, Straight Spruce, C. T..	Net
	Oars, Straight Spruce, C. T. Lea. and Var.....	Net
	Oars, Spoon, Spruce, C. T. Lea. and Varnish.....	Net
	Rubber Rings .....pair	Net
	Paddles and Drip Cups.....	Net
	Capstan Bars and Hand Spikes..	Net

597	Steering Wheels, Improved Iron	Corrected List, See Marine Catalog
	Steering Wheels, Mahogany and Rose Wood....	
	Steering Wheels, Launch, with Drum and Round Spokes—	
	Steering Wheels, with Drum and Boxes.....	
598	Pronellor Wheels and Shaft	
	Polished Brass Jib Sheet Blocks	
	Sheaves:	
	For Manila Rope.....	
	For Wire Rope.....	

599	Socket Oar Locks—	
	Galvanized Malleable No. 0 to 2 inclusive.....	30%
	Larger	20%
	Polished Brass	25%
	Round Oar Locks—	
	Galvanized	30%
	Polished Brass	15%

PAGE PRICE

599	Allen's Bow Facing Oars, complete with Spruce Oars, net, per set.....	$6.00
	Irons only, net, per set....	5.00
600	North River Oar Locks:	
	Galvanized, per pair...net.	.18
	Polished Brass, per pair, net	1.30
	Row Locks, Patent Swivel—	
	Galv.	20%
	Pol. Brass	30%
	Boston Pattern Oar Locks, Socket Pattern—	
	Galv.	20%
	Brass and N. P.....	35%
	Side Pattern—	
	Galv.	20%
	Brass and N. P.....	35%
	Extra Long Side Pattern—	
	Galv.	20%
	Brass	15%
601	Row Locks, Side Plate—	
	Galv.	20%
	Brass	15%
	Acme Pattern—	
	Galv. and Brass.....	20%
	Self-Adjusting—	
	Galv.	30%
	Brass	10%
	Moline Side Plate.....	20%
	Thole Pins—	
	Galv. Iron, net per set.....	$1.25
	Hickory and Locust.....	Net
	Kern's Double Motion—	
	Galv. Iron, net, per pair..	$2.00
	Pol. Brass and N. P.....	4.50
	Outrigger	20%
602	Grommets—	
	Sheet Brass	50%
	Conical and Spur Brass...	30%
	Oblong Brass	30%
	Eyelet Brass	30%
	Three Part	30%
	Mail Bag	30%
	Grommet Knobs	30%
	Grommet Rings, Galv. Iron..	40%
603	Punches, Dies and Cutters..	30%
	Sailmakers' Mallets	Net
	Grommet Setting Machines.	10%
	Grommet Setting Machines, Dies	Net
	Sailmakers' Bench Hooks...	10%
	Sailmakers' Marline Spikes and Prickers	15%
	Carpenter Head Rod and Hook.....	10%
604	Fids and Trawl Splicers...	15%
	Palms	Net

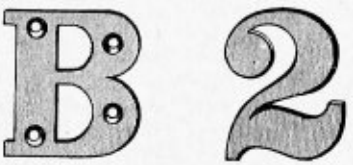
PAGE		PRICE
604	Needles, Full Pkgs 25%, Less	Net
	Sheaths and Belts	Net
	Sailmakers' Heavers	Net
605	Slide Rods	40%
	Cleats, Awning, No. 1 to No. 3	40%
	Cleats, Awning, No. 4	10%
	Awning Blocks, Galv. Iron and Pressed Steel	40%
	Head Rod Holders	40%
	Star Awning Stub	Net
	Star Shield	Net
	Lag Screws	Market
	Awning Chain	30%
606	Bull's Eyes, Unstrapped	20%
	Strapped Lizards	40%
	Glass Rings	40%
	Hooks and Eyes	10%
	F. G. L. Snap Hooks	40%
	Harness Snaps	25%
	Thimbles—	
	Sailmakers'	30%
	Egg Shaped	30%
	Open Clew	10%
607-612	Awning Hardware, doz. Lots ....40% Less	Net
613	Berg's Roller Awning Fixtures	10%
614	Awning Rollers, doz. Lots ....40% Less	25%
615	Screw Eyes, Bright Wire, Gross Lots	80%
	Screw Eyes, Brass Wire, Gross Lots	80%
	Staples, Plain, Full Pkgs	90%
	Staples, Galv., Full Pkgs. ....15% Less	Net
616	Marvel Rod Cutter	15%
	Iron Cutter	40%
	Frame Bender	40%
	Angle Bender	25%
	Auto-Lock	30%
617	Tent and Ridge Pole Bands	10%
	Ferrules	15%
	Tent Slides, Galv. Iron	40%
	Balance of Page....On Application	
618	Clews, Doz. Lots 15%; Less	Net
619	Jib Sheet Blocks	10%
	Dead Eyes, Hearts, Bull's Eyes and Trucks	Net
	Serving Boards, each $0.80; Less	10%
	Mallets, each $1.00; Less	10%
	Belaying Pins	10%

Ship Scrapers—	Doz.	Less
Cabinet Scrapers 2 x4	$2.40	30%
Cabinet Scrapers 2½x6	2.40	30%
Cabinet Scrapers 3 x5	3.60	30%
Cabinet Scrapers 4 x6	3.60	30%
Deck Plugs		25%

PAGE		PRICE
620-621	Shackles—	
	5/16" to ½"	40-10%
	5/16" to 1¼"	40%
	Larger	30%
	Heart Shackles	10%
622	Ring Bolts—	
	¼ to ½	35%
	Larger	25%
	Screw Eye Bolts—	
	¼ to ½	45%
	Larger	35%
	Weldless Eye Nuts	10%
623	Eye Bolts—	
	¼ to ½	45%
	Larger	35%
	Screw Hooks	35%
	S Hooks	20%
624	Hooks with Open Thimble	30%
	Hartz Hooks	30%
	Hook with Wire Rope Thimbles	30%
625	Swivel Hooks	10%
	Small Eye Hooks	10%
	Lobster Claw	20%
	Open Thimbles	20%
	Riggers' Screws	20%
	Marline Spikes	Net
626	Boat Cleats—	
	Square Base, Galv.	30%
	Brass	15%
	Open Base, Galv.	30%
	Brass	35%
	Combination	Net
	Main Sheet	15%
	Wire Stay, Galv.	15%
	Brass	25%
	Round Bottom, Galv.	20%
	Brass	10%
	Ship Cleats	20%

Letters and Figures

Polished Brass With Holes for Screws

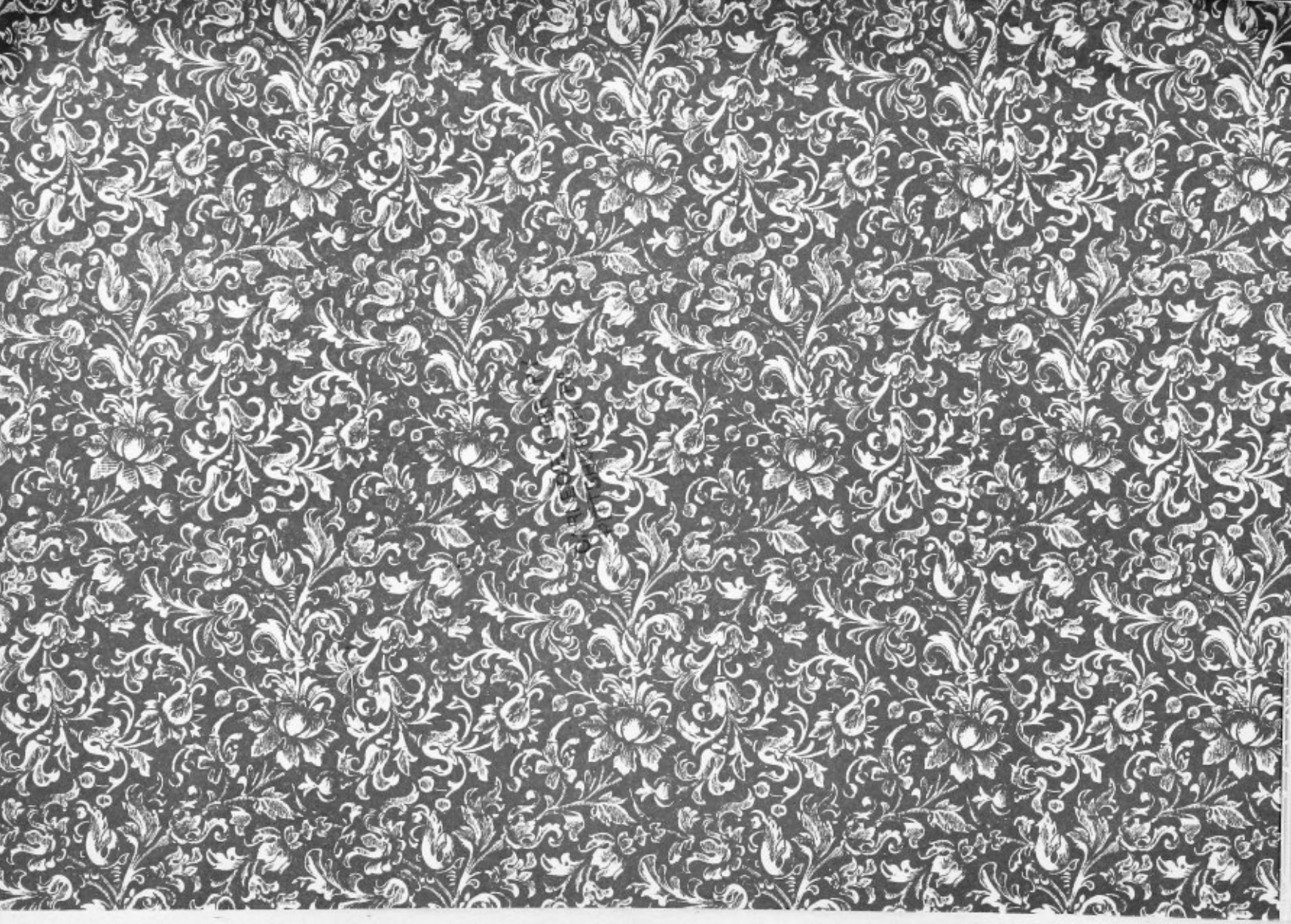


Length, inches.	Countersunk for Screw No.	Letters, Each.	Figures Each.
1	4	$0.12	$0.12
1½	6	.18	.18
2	6	.25	.25
2½	8	.30	.30
3	10	.40	.40
4	10	.60	.60
6	10	1.00	1.00

Discount 50%

PAGE		PRICE
627	Chocks—	
	Galv. 3½ to 6"	25%
	Larger	20%
	Polished Brass	40%
	Nigger Head, Galv.	10%
	Polished Brass	30%
	Closed	15%
	Bevel or Bow, 3 to 12"	25%
	Bevel or Bow, Heavy Pattern	35%
	Polished Brass—	
	3 inch, per pair....Net	$0.35
	4 inch, per pair....Net	.40
	4½ inch, per pair....Net	.50
	5 inch, per pair....Net	.60
	5½ inch, per pair....Net	.70
	6½ inch, per pair....Net	1.00
	8 inch, per pair....Net	1.75
	9 inch, per pair....Net	3.00
	10½ inch, per pair....Net	4.70
	12 inch, per pair....Net	7.00
628	Boat Hooks and Navy, Sharp Point—	
	Galvanized	25%
	Brass	30%
	Wrought Iron	Net
	Improved Galv.	20%
	Brass	15%
	Anchor	20%
	Handles	10%
629	Jib Hanks	30%
	Barrel Hooks	10%
	Can Hooks	10%
	Sounding Leads	Net
	Chain Hooks	20%
630	Gaff-Topsail Sheet Hooks	Net
	Imp. Boat Snap Hooks—	
	Galvanized	15%
	Brass	20%
	Lothrop's Snap for Jibs	15%
631	Caulking Irons	Net
	Hawsing Beetles	Net
	Hawsing Irons	Net
	Caulking Mallets	Net
	Davits on application.	
632	Anchors—Kedge	
	Sizes 25 to 100 lbs., Black per lb. ....Net	$0.07

PAGE		PRICE
632	Sizes 105 to 200 lbs., Black, per lb. ....Net	.07½
	Sizes 205 lbs. and over, Black, lb. ....Net	.08
	For galvanizing, add 2c per lb. net.	
	Dirigo Folding Anchors:	
	Galvanized	20%
	Brass	10%
	Babbitt	35%
633	Anchors—	
	Cape Cod	Net
	Mushroom	Net
	Grapplings	10%
	Imp. Mooring....On Application	
634	Deck Irons	Net
	Deck Pipes, Galv.	20%
	Brass	10%
	Deck Lights, Glass	20%
	Port Lights—	
	Monitor Pattern, 3" to 8"	30%
	Larger	25%
	Axe Brackets	30%
	Leaders for Wheel Ropes	10%
635	Flag Staff Sockets—	
	Flush, Galv.	30%
	Pol. Brass, ½" to 1¼"	40%
	Larger	20%
	Upright, Galv.	25%
	Pol. Brass, ¾" to 1¼"	20%
	Larger	10%
	Stanchion Posts—	
	Galvanized Centers and Ends	20%
	Galvanized Bow and Corners	10%
	Polished Brass, Centers and Ends—	
	2" to 4", inclusive	25%
	4½" to 8", inclusive	20%
	Polished Brass, Bow and Corners—	
	2" to 4", inclusive	20%
	4½" to 8", inclusive	10%
	Plain Scroll Ends—	
	Galvanized	Net
	Brass	20%
	Brass Hand Rail	40%
636 to 650	Fishing Material— See Netting Catalog.	



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We expect to issue, from time to time, a general *Discount Guide* to this catalog for the convenience of our customers, but owing to the constant market fluctuations on a large proportion of our goods, these quotations are subject to changes without notice.

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Chicago, March, 1910
2nd Edition

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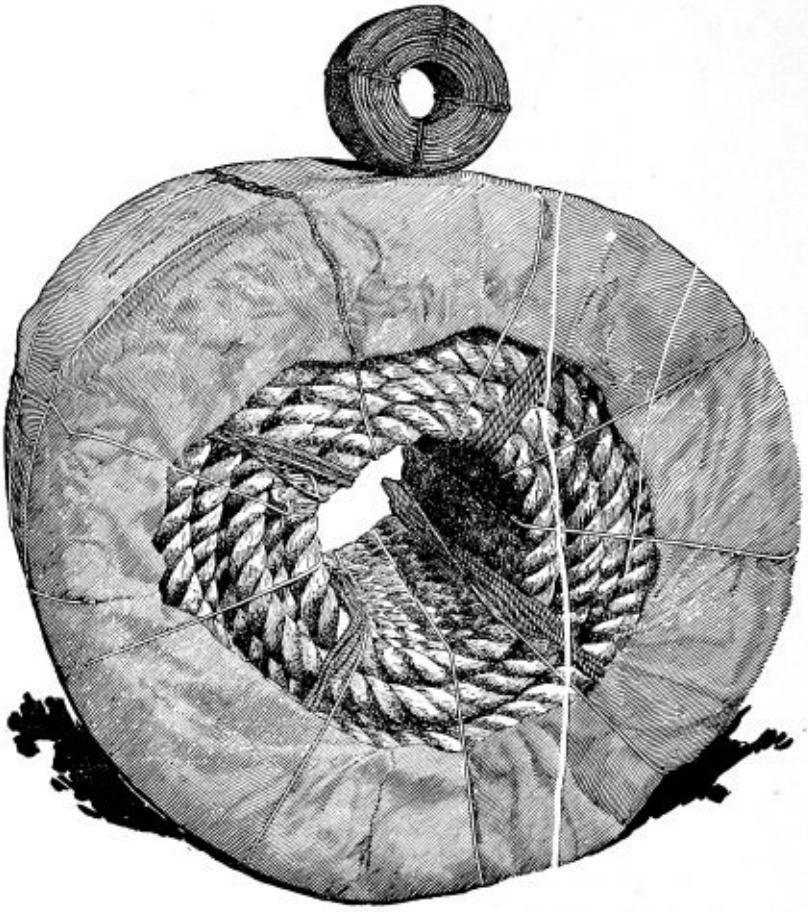
" Oiled Clothing.....362–365
" Oiled Duck..... 249

Z

Zero Lubricators..... 450
Zigzag Rules..... 528

CORDAGE



1,200 feet 9-thread Manila Rope, - 40 pounds
1,200 " 10 cir. " " - 4,000 "

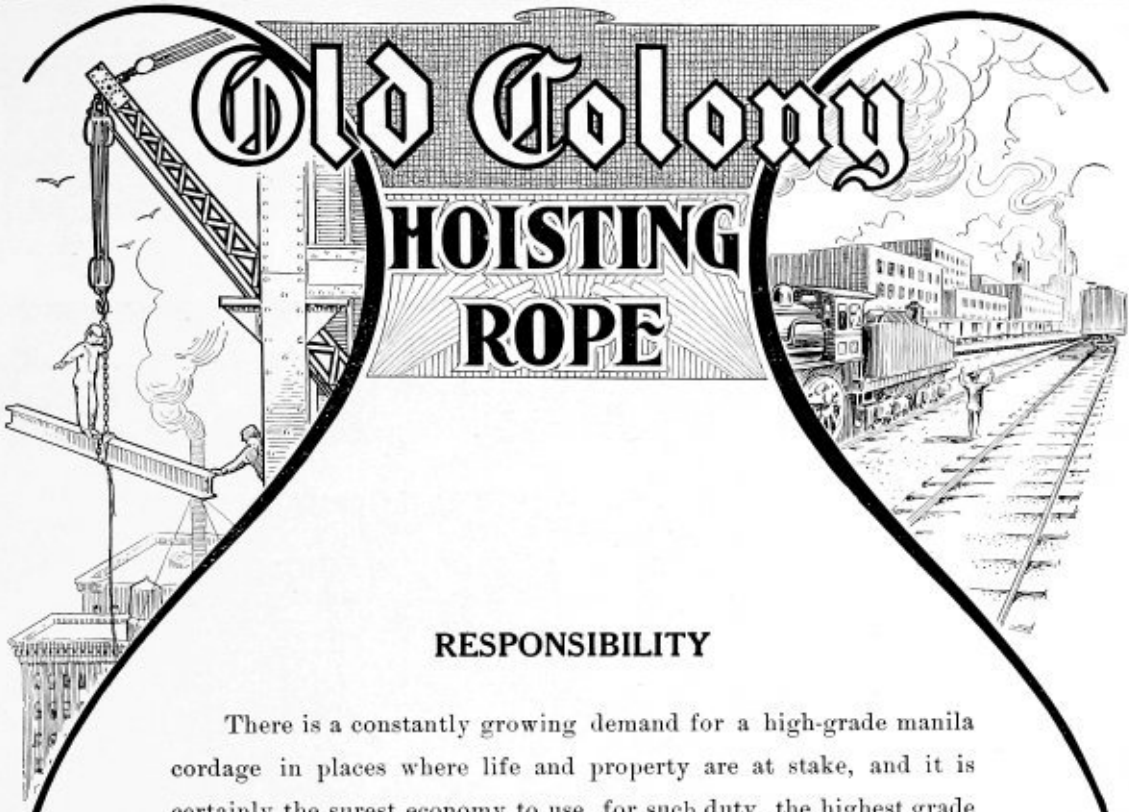
We have in our Chicago Warehouses over ONE MILLION POUNDS of Manila and Sisal Rope, in the Following Grades:

Old Colony Hoisting **Old Colony Transmission**

G. B. C. & Co. Best Pure Manila

Standard Pure Manila, H Manila, Pure Sisal, Complex

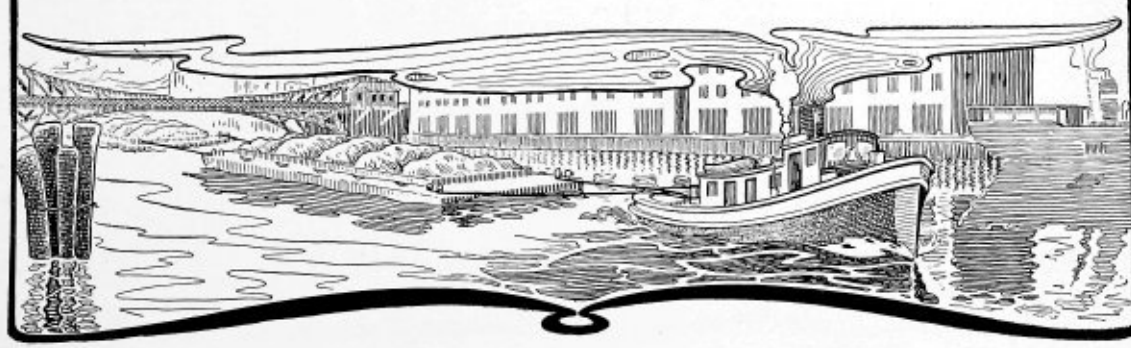
Lathyarn, Hide, Hay, and Bailing



RESPONSIBILITY

There is a constantly growing demand for a high-grade manila cordage in places where life and property are at stake, and it is certainly the surest economy to use, for such duty, the highest grade of rope obtainable. OLD COLONY hoisting rope is designed to fill this requirement, and any one using it can rest assured that they have guarded against accident to the best of their ability.

OLD COLONY rope is made especially out of selected long fibre manila hemp, and we thoroughly recommend it as the best rope the market affords. We carry it in Chicago Stock, in 3 and 4 strand, $\frac{3}{8}$ to 4 inch diameter, in 1,200 ft coils.



Old Colony

Trade Mark

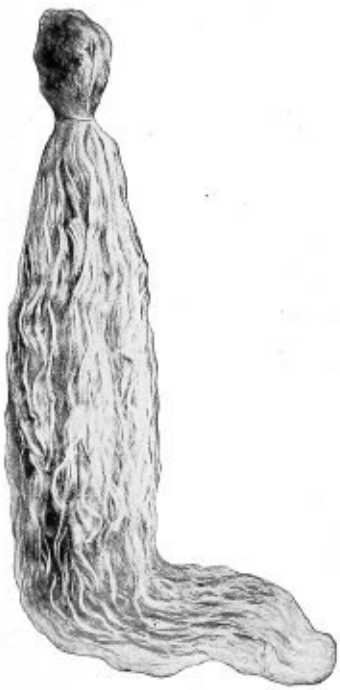
TRANSMISSION ROPE

Bale of Manila Hemp

TABLE OF WEIGHTS, PULLEY DIAMETERS TO BE USED IN CONNECTION WITH OLD COLONY ROPE

Size of Rope	Approximate Weight of 1000 Feet	Proper Diameter Pulley
⅜ inch	75 lbs.	18 inches
½ "	95 "	22 "
⅝ "	160 "	24 "
¾ "	250 "	30 "
⅞ "	340 "	36 "
1 "	400 "	42 "
1⅛ "	480 "	48 "
1¼ "	550 "	54 "
1⅜ "	700 "	57 "
1½ "	750 "	60 "
1¾ "	1170 "	72 "
2 "	1400 "	84 "

Above weight is for Four Strand Rope. Three Strand Rope will weigh approximately 5% less.



Hank of Manila Hemp

TABLE HORSE-POWER TRANSMITTED BY ROPE

In determining the Horse-Power which a rope will transmit, the problem embraces coefficient of friction, difference in tension, influence of centrifugal force, and many questions of weight, strength and velocity.

In the following table, taken from Flather's treatise on "Rope Driving," the stress on the rope is the same at all speeds (200 lbs. working strain), due allowance having been made for all of the above factors.

Velocity of Rope in Feet per Minute	Diameter of Rope, Inches						
	¾	¾	1	1¼	1½	1¾	2
1,000	1.24	2.25	3.57	5.59	8.02	10.85	14.20
2,000	2.70	3.84	6.84	10.68	15.39	20.93	27.36
2,500	3.30	4.71	8.38	13.10	18.86	25.66	33.54
3,000	3.83	5.46	9.80	15.39	21.87	29.74	38.88
3,500	4.30	6.23	11.09	17.33	24.94	34.03	44.35
4,000	4.74	6.83	12.15	18.98	27.33	37.17	48.59
4,500	5.01	7.24	12.89	20.15	29.00	39.45	51.57
5,000	5.20	7.47	13.29	29.76	29.89	40.65	53.15
5,500	5.29	7.60	13.53	21.14	30.43	41.39	54.11
6,000	5.08	7.32	13.10	20.36	29.32	39.77	52.12
6,500	4.74	6.83	12.13	19.00	27.34	37.21	48.63
7,000	4.12	5.93	10.54	16.47	23.72	32.26	42.18
7,500	3.25	4.67	8.32	13.00	18.73	25.42	33.23

SCIENTIFIC INFORMATION

Any of our customers who wish to consult the best authority on the many scientific and mechanical problems which Rope Driving presents, should obtain the splendid treatise entitled "Rope Driving," by Prof. John J. Flather, Ph. B., M. M. E. This treatise can be had for $2.00, or in case you do not care to purchase, we shall be pleased to loan you a copy for consultation, to be returned at your convenience.

Old Colony TRANSMISSION ROPE

In the selection of rope for transmission purposes, the main point to be considered is quality. The question of a few cents per pound—which at first appears to be quite an item—is, in place of being a saving, an additional expense in the long run. In the manufacture of Old Colony Transmission Rope, our aim is at all times to better it, cost being a second consideration.

We claim that the Old Colony Transmission Rope stands without a peer. It is made from the very best marks of Cebu Manila Hemp, and in its manufacture it embodies sixty-five years of our experience in the manufacture of all kinds of rope.

HINTS ON ROPE DRIVES

Large Amount of Power.—The amount of power to be transmitted in a rope drive is only limited by the allowable distances apart of shaft journals.

Safety.—Experience has shown that rope drives of all methods are by far the safest.

Future Growth.—This feature is taken care of by adding additional grooves which can be added readily and cheaply.

Distances of Driving and Driven Shafts.—The best results are obtained with centers 30 ft. to 100 ft. on vertical drives yet ropes can be operated at almost any angle.

Quietness.—The quietness when rope is used in comparison with other methods is very marked.

Assembling Shipping.—Experience has shown that the slipping is decidedly less with rope than with belting, and, in calculating speed, no allowance need be made for loss.

Even Speed.—The even speed obtained by rope drives is a very important feature.

Splicing.—Too much care can not be taken in installing a plant. We employ a number of skilled men whose sole labor is the installing of transmission rope and whom we send to all parts of the country.

Maintenance.—From careful calculations we confidently assert that the transmission rope which is lubricated from time to time with Old Colony Rope Dressing will outlast three ropes doing the same work allowed to run dry.

In 5, 10, 25 and 50 lbs. cans, per lb. 8¢.

We carry in Chicago stock in 3 and 4 strand; ⅜ to 1⅝ dia. in 3,000 ft. coils; 1¾ to 2¼ inch dia. in 2,000 ft. coils.

APPROXIMATE WEIGHT AND STRENGTH

G. B. C. & CO. BEST PURE MANILA ROPE

Manila, Sisal, and Jute Ropes weigh (about) alike.

Tarred Hemp Cordage will weigh (about) one-fourth more.

Diameter inches	Circumference in inches	Number of feet in 1 lb.	Coils		Strength of New Manila Rope, lbs.	Diameter inches
			Length, feet	Weight, lbs.		
3/16	6 thd. fine	75 feet	2,280	30	500	3/16
1/4	6 "	55 "	2,600	50	620	1/4
5/16	9 "	41 "	1,870	55	1,000	5/16
3/8	12 "	26 "	1,690	65	1,275	3/8
7/16	1 1/4	19 "	1,500	75	1,875	7/16
1/2	1 1/2	13 1/2 "	1,200	92	2,400	1/2
9/16	1 3/4	10 "	1,200	130	3,300	9/16
5/8	2	7 1/2 "	1,200	160	4,000	5/8
3/4	2 1/4	6 "	1,200	200	4,700	3/4
13/16	2 1/2	5 "	1,200	250	5,600	13/16
7/8	2 3/4	4 "	1,200	290	6,500	7/8
1	3	3 1/3 "	1,200	350	7,500	1
1 1/16	3 1/4	2 7/8 "	1,200	400	8,900	1 1/16
1 1/8	3 1/2	2 1/2 "	1,200	450	10,500	1 1/8
1 1/4	3 3/4	2 1/6 "	1,200	510	12,500	1 1/4
1 3/8	4 1/4	1 9/10 "	1,200	660	14,000	1 3/8
1 1/2	4 1/2	1 1/2 "	1,200	775	17,000	1 1/2
1 5/8	5	1 1/3 "	1,200	950	20,000	1 5/8
1 3/4	5 1/2	1 "	1,200	1,150	25,000	1 3/4
2	6	10 inches	1,200	1,376	30,000	2
2 1/8	6 1/2	8 3/5 "	1,200	1,600	33,000	2 1/8
2 1/4	7	7 2/5 "	1,200	1,850	37,000	2 1/4
2 1/2	7 1/2	6 1/2 "	1,200	2,200	43,000	2 1/2
2 5/8	8	5 2/3 "	1,200	2,550	50,000	2 5/8
2 7/8	8 1/2	5 "	1,200	2,850	56,000	2 7/8
3	9	4 1/2 "	1,200	3,150	62,000	3
3 1/8	9 1/2	4 "	1,200	3,470	68,000	3 1/8
3 3/8	10	3 5/8 "	1,200	3,850	75,000	3 3/8

The relative strength of Manila to Sisal is about as 7 is to 5.

CORDAGE BASIS

Basis on Manila and Sisal is 1/16 Inch Diameter or 1 1/4 Inch Circumference and Larger

12 thread or 3/8 inch diameter ..... 1/2c above basis.
6 and 9 thread or 1/4 and 5/16 inch diameter ..... 1c " "
Fine 6 thread or 3/16 inch diameter ..... 1 1/2c " "
1/8 inch diameter ..... 2c " "
Bolt and Point Rope ..... 2c extra.
Drilling Cable and Sand Line ..... 1c "
All 4 strand Manila and Sisal, 5/8 inch diameter and less ..... 1c "
Tallow Laid Manila ..... 1c "
Old Colony Transmission Rope ..... on application.
Hay, Hide and Bail Ropes, Medium and Regular ..... basis.
" " " " Fine ..... 1/2c above basis.
" " " " Extra Fine ..... 1c " "
" " " " Laid ..... 1/2c " "
" " " " Unoiled ..... 1c extra.
Lariat Rope, 3 strand ..... 2c "
" " 4 " ..... 2 1/2c "
All Rope without Oil ..... 1c "
Whale Line ..... 2c "

MANILA ROPE

All Coils of Manila Rope are stenciled as shown.

G.B.C.&CO. BEST PURE MANILA

G. B. C. & CO. BEST PURE MANILA ROPE

Our stock includes in 1,200 ft. coils 3/16 to 5 inch diameter, in half coils 1/2 to 2 inch diameter. Coils.....per lb., $.....

Cut Lengths ..... " .....

STANDARD PURE MANILA ROPE

Our stock includes 3/16 to 1 1/2 inch diameter in 1,200 ft. coils and half coils. We do not cut coils.....per lb., $.....

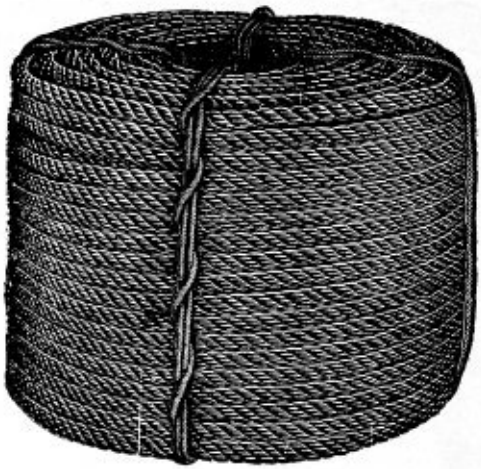
STANDARD PURE MANILA

H MANILA

H MANILA

Our stock includes 3/16 to 1 1/4 inch diameter in 1200 ft. coils and half coils. We do not cut coils.....per lb., $.....

HAWSER LAID MANILA ROPE
OR
WELL DRILLING CABLE



We carry in Chicago stock all sizes ⅝ to 2¼ inch diameter in 1,200 foot coils. The ⅝ and ¾ inch diameter is used for Governor ropes on passenger and freight elevators. The 1⅛ inch diameter is used extensively by Chicago contractors for hoisting buckets in caisson construction.

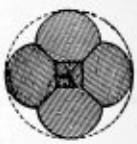
Full coils .....per lb., $..... Cut lengths .....per lb., $.....

TALLOW LAID MANILA ROPE

Cross Section of 3 Strand Rope

This Rope is used for general hoisting and carriage movement in saw-mills. We carry it in stock in sizes ⅜ inch to 2¼ inch diameter, in both 3 and 4 strand, in coils 1,200 feet long. Longer lengths to order.

		3 Strand	4 Strand
⅜ inch diameter	per lb.,	$.....	$.....
7/16 " "	"	.....	.....
½ " " and larger	"	.....	.....



Cross Section of 4 Strand Rope

STEAM-TARRED MANILA ROPE

Right and Left Laid, and Stretched, for Seine and Net Hanging

6 and 9 thread	per lb.,	$.....
12 thread	"	.....
15 " and larger	"	.....

STEAM-TARRED SISAL ROPE

Right and Left Laid, and Stretched, for Seine and Net Hanging

6 and 9 thread	per lb.,	$.....
12 thread	"	.....
15 " and larger	"	.....

OUR BRAND

GOOD LUCK

BINDER TWINE

In 50 lb. Bales, 5 lb. Balls

Pure Manila, 650 feet to lb	per lb.,	$.....
Manila, 600 feet to lb	"	.....
Standard, 500 feet to lb	"	.....
Sisal, 500 feet to lb	"	.....

Our Twine runs very evenly and is free from the bunches and irregular spots so common in ordinary Binder Twine.

SISAL ROPE

We carry in Chicago stock, all sizes, 3/16 to 1½ inch diameter in coils and ¼ to 1½ inch diameter in half coils.

		Pure	Complex
3/16 inch diameter	per lb,	$.....	$.....
¼ " and 5/16 inch diameter	"	.....	.....
3/8 " diameter	"	.....	.....
7/16 " " and larger	"	.....	.....

SISAL HIDE ROPE

In Strand (twisted)

We carry in Chicago stock, all sizes, coils about 100 lbs. in pure Sisal and Complex.

PURE SISAL

2 and 3 ply, Regular, coils	per lb.	$.....
2 ply, Medium, coils	"	.....
2 " Fine, coils	"	.....
2 " Extra Fine, coils	"	.....

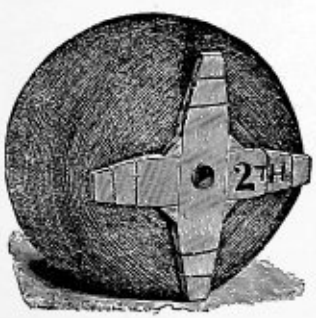
COMPLEX

2 and 3 ply, Regular, coils	per lb.	$.....
2 ply, Medium, coils	"	.....
2 " Fine, coils	"	.....
2 " Extra Fine, coils	"	.....

SISAL HAY ROPE

Or Bailing Rope (twisted)

We carry in Chicago stock, Pure Sisal and Complex in coils and reels, about 55 lbs. and 5 lb. balls in 100 lb. bales.



PURE SISAL

2 and 3 ply Regular, coils or reels	per lb.	$.....
2 ply, Medium	"	.....
2 " Fine	"	.....
2 and 3 ply, Extra Fine	"	.....
4, 5 and 6 ply, Regular	"	.....

COMPLEX

2 and 3 ply, Regular, coils or reels	per lb.	$.....
2 ply, Medium, coils or reels, about	"	.....
2 " Fine " " "	"	.....
2 and 3 ply, Extra Fine, coils or reels	"	.....
4, 5 and 6 ply, regular " "	"	.....

All Unoiled Sisal, 1c per lb. extra.

LATH YARN

Tarred

We carry in Chicago stock all brands in 100, 200 and 500-lb. Coils. Our assortment is suited for all uses, carrying three grades, viz.:

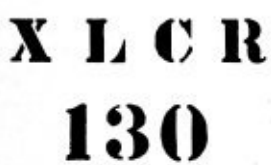
G. B. C. & CO.'S BEST

Evenly Spun, Lightly Tarred

110 yarns in the strand.....per lb., $.....
130 " " " ..... " .....
200 " " " ..... " .....

ANCHOR BRAND

110 yarns in the strand.....per lb., $.....
130 " " " ..... " .....
200 " " " ..... " .....



X L C R BRAND

110 yarns in the strand.....per lb., $.....
130 " " " ..... " .....
200 " " " ..... " .....

RING YARN

Untarred Lath Yarn

We carry in Chicago stock Pure Sisal and Complex in 100-lb. Coils; on Reels, Single End and 5 lb. Balls in 100 lb. Bales.

PURE SISAL

110 yarns in the strand.....per lb., $.....
130 " " " ..... " .....
200 " " " ..... " .....

COMPLEX

110 yarns in the strand.....per lb., $.....
130 " " " ..... " .....
200 " " " ..... " .....

COTTON ROPE

Coil

Tube

Reel

We carry Chicago stock in Cotton Rope, Old Colony 3/16, 1/4 and 5/16 inch diameter in Tubes and Reels. "A A," 1/4 to 1 1/4 inch diameter in Reels and Coils.

OLD COLONY		Reels	Tubes
3/16 inch diameter	per lb.,	$.....	$.....
1/4 and 5/16 inch dia	"	.....	.....

"A A"		Reels	Coils
1/4 to 1 1/4 inch dia	per lb.,	$.....	$.....

JUTE ROPE

1/8 to 3/4 Inch Diameter, in Coils about 50 lbs.

3/16 inch diameter	per lb.,	$.....	1/4 to 3/4 inch diameter per lb., $.....

TARRED CORDAGE

American Hemp, 2 in. cir. and less.	per lb.,	$.....	Ratline, 6, 9, 12, 15, 18 and 24 thread,	per lb.,	$.....
American Hemp, Larger to 4 in. cir.	"	.....	Regular Houseline, 5 and 10 lb. Balls	"	.....
Russia Bolt Rope, 6thd to 3 1/2 cir.	"	.....	(P) Houseline, 1 and 20 lb. Balls	"	.....
Regular Marline, 1, 5, 10 and 25 lb. Balls and Coils	per lb.,	.....	Hambroline, 5 and 10 lb. Balls	"	.....
Yacht Marline, 1 lb. Balls	"	.....	Rounding, 5 and 10 lb. Balls	"	.....
(P) " 1 and 20 lb. Balls	"	.....	Spun Yarn, 5 and 10 lb. Balls	"	.....

HEMP PACKINGS

Italian A, 25, 50 and 100 lb. coils		per lb.,	$.....	
" B, 25, 50 and 100	"	"	.....	.....
American A, 50 and 100	"	"	.....	.....
" B, 50 and 100	"	"	.....	.....
Jute, 100	"	"	.....	.....
" Tarred, 100	"	"	.....	.....

CABLE LAID HEMP BELL CORDS

1/4 and 1/2 Inch Diameter, in Coils about 1,800 Feet Long

Italian	per lb.,	$.....	
American	"	.....	
India	"	.....	

OAKUM

50 lb. Bales

Best	per bale,	$.....
U. S. Navy	"	.....
Navy	"	.....
Best, spun	"	.....
U. S. Navy, spun	"	.....
Navy, "	"	.....
Plumbers', "	"	.....

SPUN COTTON

50 lb. Bales

Yacht, 5 ply	per lb.,	$.....
Navy, 3 ply	"	.....

CANDLE WICKING

100 lb. Bales, 5 and 10 lb. Sacks

White Star	per lb.,	$.....
Charm	"	.....
K	"	.....
Braided Torch, in 10 lb. coils	"	.....
Rope Laid Torch, in 10 lb. coils	"	.....

TOW

100 lb. bales	per lb.,	$.....

EXCELSIOR

100 lb. bales	per lb.,	$.....

PITCH MOPS

Wool, with handles	per doz.,	$4.50

PITCH LADLES

Tin, improved pattern	per doz.,	$4.75
Iron, " "	"	5.75

PINE TAR

Barrels, about 30 gallons	each,	$.....
Five gallon cans	per doz.,	.....
Three " "	"	.....
Two " "	"	.....
One " "	"	.....
Half " "	"	.....
Quart cans	"	.....
Pint "	"	.....

NAVY OR PINE PITCH

Barrels, about 250 lbs	each,	$.....
Boxes, 5, 10, 25, 50 and 100 lbs	per lb.,	.....

COAL TAR

Barrels, about 50 gallons	each,	$.....
Five gallon cans	"	.....
Two " "	"	.....
One " "	"	.....

COAL TAR PITCH

Composition

Barrels, about 360 lbs	per lb.,	$.....
Boxes, 5, 10, 25 and 50 lbs	"	.....

RESIN

"F" Grade

Barrels, about 460 lbs	per lb.,	$.....
Boxes, 5, 10, 25 and 50 lbs	"	.....

TARRED FELT

Rolls, about 50 lbs	per lb.,	$.....

BRAIDED COTTON SASH CORDS

Put up in hanks of 100 feet each, two connected, one dozen hanks (1,200 feet) in a package; 6 dozen Nos. 6 to 9 inclusive, and 4 dozen Nos. 10 and 12 in a bale; or in coils of 1,200 feet.

We are the general selling agents for the Anniston Cordage Co., which mill we own and operate, and are in the best possible position to take care of the trade in these goods.

No.	Diameter	Weight per doz. Hanks	Length per lb.	Suitable for Weights	Minimum Diam. of Pulley allowable
6	3/16 inch	17 lbs.	70 feet	Less than 5 lbs.	1½ inch
7	7/32 "	22 "	55 "	5 to 15 lbs.	1¾ "
8	¼ "	26 "	46 "	15 to 25 "	2 "
9	9/32 "	32 "	37 "	25 to 35 "	2¼ "
10	5/16 "	40 "	30 "	35 to 45 "	2½ "
12	⅜ "	58 "	21 "	45 to 60 "	3 "

LIST OF COTTON BRAIDED SASH CORD

Brand	No. 6		No. 7		Nos. 8 to 12	
	White	Drab	White	Drab	White	Drab
Old Colony.....per lb.	....	....	....	....	....	....
Anniston..... "	....	....	....	....	....	....
Samson Spot..... "	....	....	....	....	....	....
Silver Lake A..... "	....	....	....	....	....	....
" " B..... "	....	....	....	....	....	....

BRAIDED COTTON BELL CORDS

In coils any length desired. Coils in stock about 1,000 feet.

Nos.	6	7	8	9	10
Inches diameter,	3/16	7/32	1/4	9/32	5/16

	White.	Drab.	Mahogany.
Old Colony brand "A" per lb., $	....	....	....
Anniston brand. ..... "	....	....	....
Samson brand. ..... "	....	....	....

SOLID BRAIDED ROPE

In coils 1,200 feet.

No.	Diameter	Weight per 100 feet
14	7/16 inch	7 lbs.
16	1/2 "	9 "
18	9/16 "	11 "
20	5/8 "	13 "
24	3/4 "	17 "
28	7/8 "	22 "
32	1 "	28 "
36	1 1/8 "	35 "

White Cotton.....	per lb.	$0.50
Drab "	"	.55
Italian Hemp.....	"	.55
Linen "	"	.65

TROLLEY AND ARC LIGHT CORD

Waterproofed Braided Cotton

In coils about 1,000 feet long or any length desired.

No. 12 (3/8 inch diameter) is commonly used for Arc Light.

No. 8 (1/4 inch diameter) and No. 9 (9/32 inch diameter) are usually used for Trolleys.

"A" Quality Trolley Cord.....	per lb.,	$....
"Arc" Light Cord	"	....

BELL CORD COUPLINGS

Put up one dozen in a box complete, with screws to match.

Japanned, No. 8 and No. 9.....	per doz.	$0.60
" " 10 " " 12.....	"	.70

NOTE.— To insert solid braided cord in a coupling, cut the end diagonally and twist it in.

VALVE CORD HOOKS

For use with air brake and air signal systems. With socket for firmly holding the cord. Furnished in brass, in size for No. 6 or No. 7 cord complete, with screws.

Price .....per doz., $1.00

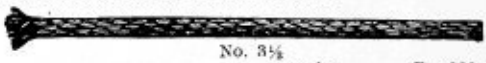
SMALL BRAIDED LINES

Nos. 3½, 4 and 4½, put up in hanks of 48 feet each (several connected in one length), one dozen hanks (192 yards) in a box, or in coils of 1,000 yards.

The white cotton lines are bleached.

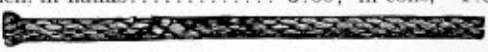
The white and drab cotton lines are glazed. Other colors are unglazed.

Sage, terra cotta, green, old gold, maroon, olive, Spanish olive, blue, scarlet, brown, cardinal, ecru, and pearl are kept in stock at factory, in No. 4 size, and furnished to order in the other sizes.



No. 3½

	Per doz.	Per 100 yds.
Cotton, white, in hanks	$1.50;	in coils, $0.75
" bl'ch'd or col'd, in hanks	1.75;	in coils, .87½
Linen, in hanks.....	3.00;	in coils, 1.50

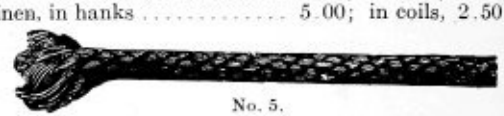


No. 4

	Per doz.	Per 100 yds.
Cotton, white, in hanks.	$2.00;	in coils, $1.00
" bl'chd or col'd, in hanks	2.25;	in coils, 1.12½
Linen, in hanks.....	4.00;	in coils, 2.00

No. 4½

	Per doz.	Per 100 yds.
Cotton, white, in hanks.	$2.50;	in coils, $1.25
" bl'chd or col'd, in hanks	2.75;	in coils, 1.37½
Linen, in hanks	5.00;	in coils, 2.50



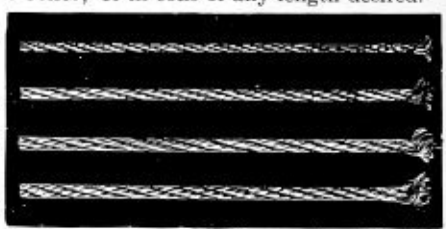
No. 5.

This cord in White or Drab Cotton and in Linen, and put up in hanks of 100 ft. each (two lines connected), one dozen in a package, or in coils of 1,000 yards.

Cotton, White, in hanks, $7.50;	in coils,	per yd.,	$0.01 7/8
" Colored, " 8.50;	"	"	.02 1/8
Linen..... " 12.00;	"	"	.03

CHALK LINES

These lines are made of Bleached Cotton put up in hanks of 20 ft. each, one dozen in a bunch, in gross and half gross boxes; or in coils of any length desired.



	Per gross lines.	Per 100 yds.
No. 0.....	$6.00	$0.60
" 1.....	6.50	.65
" 2.....	7.00	.70
" 3.....	7.50	.75

GARDEN LINES

Garden Line is made of Italian hemp, solid braided, in size a little smaller than No. 5. Put up in hanks of 100 ft. each (two lines connected), one dozen in a package. Per doz. hanks.....$5.00

CLOTHES LINES

We Own and Operate The Anniston Cordage Co., Anniston, Alabama

BRAIDED AND TWISTED COTTON LINES

MANILA SISAL AND JUTE LINES

We make all kinds at our mills at Anniston and Chicago.

All our Lines are packed in dozens. The dozens are neatly wrapped in paper, and a label showing brand and lengths is placed on each.

We pack one gross in a bale. The labels are plain but substantial, and give only necessary information as to the Lines contained in package. When a Special Label of any description is required we furnish same free of charge, provided the order is sufficiently large to warrant the additional expense and care.

The higher class of Lines, including all Braided Lines, have a label on each hank. We guarantee our Lines as full length in every case.

We make all Lines with two hanks connected, so that they can be retailed in pairs or single, as occasion demands. Prosecution will follow the use by others of our brands or labels.

Anniston	Water Proof Braided Cotton per gross 100 ft. Hanks							$	
Oriole	"	"	"	"	"	"	"		
Rainbow	"	"	"	"	"	"	"		
Air Line	Solid Braided Cotton per gross 100 ft. Hanks								
Gilt Edge	"	"	"	"	"	"			
Acme	"	"	"	"	"	"			
Empire				"	"	"			
Alabama	Braided Cotton			"	"	"			
Advance	"	"		"	"	"			
Albemarle	"	"		"	"	"			
Allston	"	"		"	"	"			
Eclipse	"	"		"	"	"			
Chicago	"	"		"	"	"			
Calhoun	"	"		"	"	"			
Standard	"	"		"	"	"			
Columbia	"	"		"	"	"			
Manila	Twisted per gross 100 ft Hanks								
North Shore	Hemp twisted per gross 100 ft. Hanks								
Vernon	Cotton	"	"	"	"	"			
Victor		"	"	"	"	"			
Sisal	6 thd.	"	"	"	"	"			
Sisal	3 "	"	"	"	"	"			

SCALE OF PRICES AND LENGTHS

Price of	90	foot Lines is	90	per cent of	100	foot basis.	Price of	50	foot Lines is	50	per cent of	100	foot basis.
"	80	" "	80	" "	100	" "	"	40	" "	40	" "	100	" "
"	70	" "	70	" "	100	" "	"	30	" "	30	" "	100	" "
"	60	" "	60	" "	100	" "							

No. 1 Jute ..... per lb., $....

We carry in Chicago stock all Braided Lines in 50 ft. lengths, twisted Lines in all Lengths.

LARIAT ROPE

Tom Horn Manila Lariat Rope with the Green Strand Is made of the Finest Grades of Cebu Hemp.

QUALITY IS THE ONLY CONSIDERATION IN ITS MANUFACTURE

In order to protect buyers against inferior quality

Every 25 feet in coils and each lariat will bear this tag

IN 1200 FT. COILS

7/16 and 1/2 inch diameter, 3 strand. .	per lb.	$....
7/16 " 1/2 " " 4 "	"	....

PURE MANILA LARIAT ROPE IN 1,200 FT. COILS

7/16 and 1/2 inch diameter, 3 strand. .	per lb.	$....
7/16 " 1/2 " " 4 "	"	....

TOM HORN LARIATS WITH BRASS HONDA

7/16 in. diameter, 35 ft.	per doz.	$12.00
7/16 in. " 40 "	"	12.75
7/16 in. " 45 "	"	14.00
1/2 in. " 35 "	"	15.00
1/2 in. " 40 "	"	16.50
1/2 in. " 45 "	"	18.00

PURE SISAL LARIAT ROPE IN 1,200 FT. COILS

7/16 and 1/2 diameter, 3 strand.	per lb.	$.....
7/16 " 1/2 " 4 "	"	.....

BRAIDED COTTON AND LINEN LARIATS

	With Rawhide or Galvanized Honda Each	With Brass Honda Each
Linen, No. 12 (40 feet)....	$2.50	$2.75
Extra lengths, 5 cts. per foot.		
" " 14 (40 feet).....	3.25	3.50
Extra lengths, 7 cts. per foot		
" " 16 (40 feet).....	4.00	4.25
Extra lengths, 9 cts. per foot.		
Cotton, " 16 (40 feet).....	2.50	2.75
Extra lengths 5 cts. per foot.		

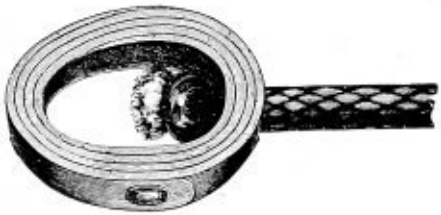
IMPORTED YACHT MANILA ROPE FOR LARIATS

This rope is not as hard twisted as the regular Manila.

In 1,200 Ft. Coils

7/16 diameter, 3 strand.....	per lb.	$....

LARIAT HONDA



Rawhide (One-half Size)

Rawhide Hondas.....per doz. $3.00

LARIAT HONDA

Galv. Thimble and Grip (One-half Size)

Galvanized Hondas.....	per doz.	$....
Brass "	"	....

Note.— All Manila Lariats have Hondas spliced in Braided Cotton and Linen and are fastened with Grip as illustrated.

TWINES

We carry in our Chicago Warehouses the greatest variety and largest stock of twines in the United States.

FLAX TWINES

SMALL WRAPPING

Assortment in Chicago Stock

½ lb. Balls 3 lb. Package 144 lb. Bale in all grades and numbers.
¼ lb. Balls 3 lb. Package 144 lb. Bale in all grades in numbers 9, 12 and 18.
½ lb. Balls in Barrel Bags in all grades and numbers.
10 and 40 lb. Reels in B Italian.
10, 20 and 40 lb. Reels in BC American.
10, 20 and 40 lb Reels in Empress.

Quality	No. 9	No. 12	No. 18	No. 24	No. 36	No. 48	No. 60
"B" Italian.....per lb.	.....	.....	.....	.....	.....	.....	.....
"B" American..... "	.....	.....	.....	.....	.....	.....	.....
"BC" American..... "	.....	.....	.....	.....	.....	.....	.....
Empress..... "	.....	.....	.....	.....	.....	.....	.....

HEMP TWINES

LARGE WRAPPING

Assortment in Chicago Stock. 450 lb. Bales—50 lb. Reels.

B AMERICAN SOAP STONE FINISH

No. 4½ in 1 and 10 lb. Balls.
No. 6 in 1, 5 and 10 lb. Balls.
No. 7 and 8 in 2 lb. Balls.
No. 4½, 5, 6, 7 and 8, in 50 lb. Reels.

BC AMERICAN

No. 4½ in ½, 1 and 10 lb. Balls.
No. 5 and 6 in 1 and 10 lb. Balls.
No. 4½, 5, 6, 7 and 8, in 50 lb. Reels.
No. 7 in 1½, 5 and 10 lb. Balls.
No. 8 in 2 lb. Balls.
No. 4½,6 7, and 8, unfinished, in 50 lb. Reels.

INDIA

No. 4½ in ¼, ½, 1, 3, 5 and 10 lb. Balls.
No. 5 in 1 and 5 lb. Balls.
No. 6 in ½, 1, 2, 3, 5 and 10 lb. Balls
No. 4½, 5, 6, 7 and 8, in 50 lb. Reels.
No. 7 in 1½, 5 and 10 lb. Balls.
No. 8 in 2 lb. Balls.
No. 4½, 5 and 6, in 100 lb. Coils, Hide Rope Style.
No. 4½, 6, 7 and 8, unfinished, in 50 lb. Reels.

AMERICAN HEMP WALL PAPER

10 lb. Balls and 50 lb. Reels in Nos. 4, 5, 6, 7, and 8 Ply.

Quality	Laid, 3 Ply						Twisted, 2 Ply
	5	6	7	8	9	10	4½
"B" American Soap Stone Finish.....per lb.	.....	.....	.....	.....	.....	.....	.....
"BC" " ..... "	.....	.....	.....	.....	.....	.....	.....
India ..... "	.....	.....	.....	.....	.....	.....	.....

BALING OR SEWING TWINES

JUTE

144 lb. bales, 12 lb. packages, in skeins.
3, 4, 5, and 6 ply ..... per lb., $....

L. M.

144 lb. bales, 12 lb. packages, in skeins and 150 lb. barrel bags in ½ lb. balls.
3, 4, 5, and 6 ply ..... per lb., $....

DIAMOND FLAX

144 lb. bales, 12 lb. packages, in skeins and 150 lb. barrel bags, in ½ lb. balls.
3, 4, 5, and 6 ply ..... per lb., $..

A SAIL — SELECTED FLAX

144 lb. bales, 12 lb packages, in skeins.
Coils Hide Rope Style.
3 and 4 ply ..... per lb., $....

AA SAIL — FINE FLAX

144 lb. bales, 12 lb. packages, in skeins.
3 and 4 ply ..... per lb., $....

SILVER FINISH — EXTRA FLAX

144 lb. bales, 12 lb. packages, in skeins
Coils Hide Rope Style.
3 and 4 ply ..... per lb., $....

ANDOVER

144 lb. bales, 12 lb. packages, in skeins.
3, 4, and 5 ply ..... per lb., $....

FLAX BALL TWINES

BLOCKING CORD

In bales, about 200 lbs.

In 1 lb. balls, 6 lb. packages. Nos.	9	12	16	20	24	28
Per lb						

In 4 lb. balls, 12 lb. packages. Nos.	36	48	60
Per lb			

GREY CABLE LAID TWINE

168 lb. bale, 3 lb. package, ½ lb. ball.

Nos	9	12	18	24	36	48
Per lb						

NO. 6 RED FLAX

168 lb. bale, 3 lb. package, ¼ lb. balls .. per lb. $....

MATTRESS TWINES

Elm Flax, 168 lb. cases, 3 lb. packages, ½ lb. balls.
Special 168 lb. bale, 3 lb. package, ½ lb. ball and 150 lb. barrel.
252 and 264 Elm Flax ..... per lb. $....
252 and 264 G. B. C. Special ..... " ....

NO. 24 WHITE FLAX

144 lb. bales, 3 lb. package, ½ lb. balls. per lb., $....

LINEN TWINES

VICTOR MACHINE THREAD

120 lb. case, 6 lb. package, 1 lb. tubes.

Nos	16-3	16-4	16-5	16-6
Per lb				

SHOE THREAD

120 lb. case, 1 lb. box, 2 oz. ball.
No. ..... 10 H. B.
Per lb. ..... $....

COTTON TWINES

BLEACHED AND HARD FINISHED

NO. 705 WHITE

3 lb. packages, ½ lb. balls and tubes .. per lb., $....

NO. 151 WHITE

6 lb. package, 1 lb. tubes ..... per lb., $....

NO. 814 RED AND WHITE

3 lb. package, ¼ lb. ball ..... per lb., $....

NO. 533 PINK

3 lb. package, ¼ lb. balls ..... per lb., $....

NO. 533 WHITE

3 lb. package, ¼ lb. balls ..... per lb., $....

JUTE TWINES

WRAPPING

½ lb. Balls in Barrel Bags about 125 lbs.

No. 1 A Quality in 2, 3, 4, 5 and 6 ply.....per lb., $.....
" 2 Quality in 2, 3, 4, 5 and 6 ply..... " .....

Single End on Reels about 55 lbs.

No. 1 Quality in 2, 3, 4, 5 and 6 ply.....per lb., $.....
" 2 " " 2, 3, 4, 5, and 6 ply..... " .....

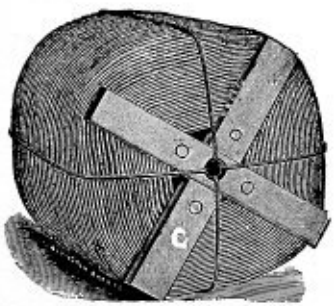
Hide Rope Style, in Coils about 100 lbs.

No. 1 Quality in 2, 3, 4, 5 and 6 ply.....per lb., $.....
" 2 " " 2, 3, 4, 5 and 6 ply..... " .....

Baling, in Skeins 12 lb. Pkg. and Bales about 144 lbs.

No. 1 Quality in 2, 3, 4, 5 and 6 ply.....per lb., $.....

TUBE ROPE



No. 1 Quality in 4, 5, 6, 8, 10, 12, 14 and 16 ply; 10 lb. Balls in 500 lb Bales; 50 lb. Reels and Hide Rope Style in 100 lb. Coils.
4 and 5 ply.....per lb., $..... 6, 8, 10, 12, 14, and 16 ply.....per lb., $.....

WOOL TWINE

No. 1 Quality 3 and 4 ply 1 lb. Balls in 125 lb. Bales and 50 lb. Reels.....per lb., $.....
" 2 " 3 and 4 ply 1 lb. Balls in 125 lb. Bales and 50 lb. Reels..... " .....

BUFFALO ROPE

Laid

No. 1 Quality 3 and 4 ply in 10 lb. Balls in 500 lb. Bales and 50 lb. Reels.....per lb., $.....

BOX TWINE

No. 1 Quality 2 ply in 1 lb. Balls in 100 lb. Bales and 50 lb. Reels and 100 lb. Coils, Hide Rope Style.....per lb., $.....

SEAMING CORD

No. 1 Quality in 2 lb. Balls in 300 lb. Bales and 50 lb. Reels.....per lb., $.....

WALL PAPER

Laid

No. 1 Quality 3 and 4 ply in 10 lb. Balls in 500 lb. Bales and 50 lb. Reels.....per lb., $.....

COTTON TWINES, YARNS AND MOPS

"OLD COLONY"

100 lb. Barrel, 100 lb. Bale

3 and 4 Ply

Balls in barrels .....per lb., $.....
Balls, 5 lb. sack, in bales..... " .....
Cones in barrels..... " .....
Tubes " " ..... " .....

COTTON BUTCHERS' TWINE

100 lb. Barrel, ½ lb. Ball

4, 6 and 8 ply .....per lb., $.....

MACHINE SEWING TWINE

Balls and Tubes

3 ply Reverse Twist .....per lb., $.....
3 " Regular " ..... " .....

SAIL TWINE

½ lb. Balls, 1 lb. Tubes

50 lb. Reels, Single Ends, 50 lb. Tubes, Hide Rope Style

4, 5, 6, 7, 8, 10, 12, 14 ply.....per lb., $.....
16, 18, 20, 24, 30, 48..... " .....

MOP YARN

100 lb. Bales in Skeins

4 ply..... per lb., $.....

CARPET WARP

100 lb. Bales, 5 lb. Packages in Skeins

4 ply .....per lb., $.....

MOPS

Bales, 1 Dozen in Package

Dandy, 4 ply 12 lb. .....per lb., $.....
" 4 " 15 " ..... " .....
" 4 " 18 " ..... " .....
C C. 4 " 12 " ..... " .....
Slasher 12 " ..... " .....

CHAMPION MOPS WITH HANDLES

1 Doz. in Bundle

No. 16.....per doz., $3.00
" 18..... " 3.25
" 20..... " 3.50

ESTIMATED WEIGHTS OF COTTON ROPE AND SEINE TWINE

Cotton Rope		Patent or Hard Laid Seine Twine			
Size	Feet per lb.	Size	Feet per lb.	Size	Feet per lb.
1/8 inch diameter	240 feet	6 thread	2886 feet	54 thread	311 feet
5/32 " "	151 "	9 "	1923 "	60 "	288 "
3/16 " "	106 "	12 "	1441 "	72 "	242 "
1/4 " "	60 "	15 "	1152 "	84 "	205 "
5/16 " "	38 "	18 "	962 "	96 "	181 "
3/8 " "	27 "	21 "	823 "	108 "	155 "
1/2 " "	14 1/2 "	24 "	722 "	120 "	145 "
5/8 " "	9 1/2 "	27 "	621 "	138 "	124 "
3/4 " "	6 3/4 "	30 "	576 "	144 "	121 "
7/8 " "	5 1/4 "	33 "	524 "	168 "	103 "
1 " "	3 3/4 "	36 "	483 "	198 "	87 "
1 1/8 " "	3 1/8 "	42 "	411 "	210 "	83 "
1 1/4 " "	2 1/2 "	48 "	362 "	240 "	71 "
1 1/2 " "	1 3/4 "				

For Soft Laid Seine Twine, add 20% to No. of feet.

For Cotton Rope, see page 39.
For Cotton Seine Twine, see pages 49 and 50.

COTTON LINES

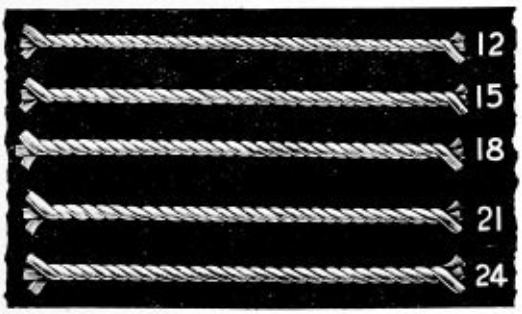
COTTON STAGING TWINE

In 40 yard lengths.

No.	12	15	18	21	24 thread.
In.	2	2	2	3	3 oz. balls.

100 lb. Bales in 5 lb. Sacks.

Cuts are actual sizes.



12, 15, 18, 21, 24 thread. . . . . per lb., $. . . .

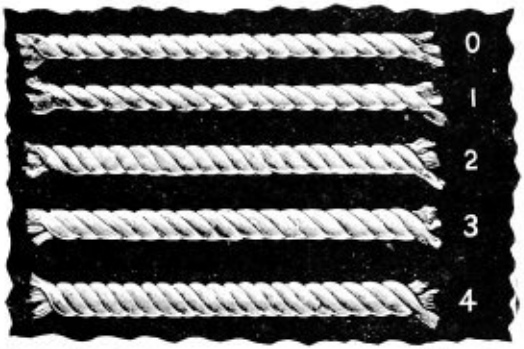
COTTON TROUT LINES

150 lb. bbls.

In 75 yard lengths.

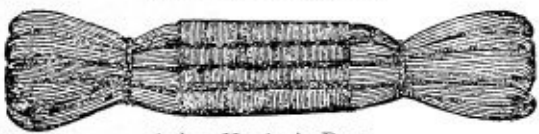
No.	0	1	2	3	4
In.	¾	1	1¼	1½	1¾ lb. balls.

Cuts are actual sizes.



No. 0, 1, 2, 3, 4. . . . . per lb., $. . . .

MASONS LINES



1 doz. Hanks in Box.

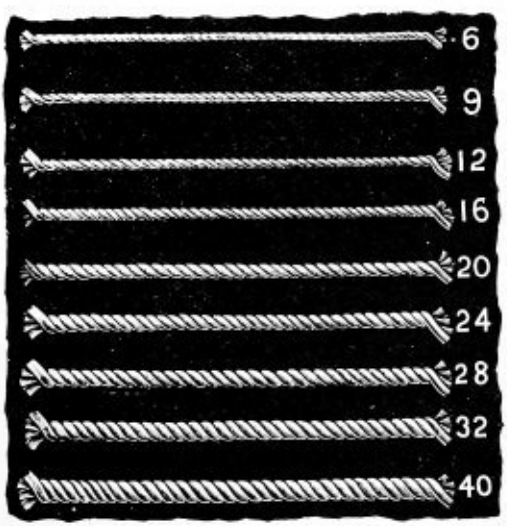
No.	WHITE	50 ft.	100 ft.	No.	YELLOW	50 ft.	100 ft.
18	per doz. hanks	$0.55	$1.00	18	per doz. hanks	$0.60	$1.10
24	" "	.75	1.50	24	" "	.85	1.65
30	" "	1.00	2.00	30	" "	1.10	2.15

COTTON SEINE TWINE

Soft Laid

Soft Laid

Actual sizes.



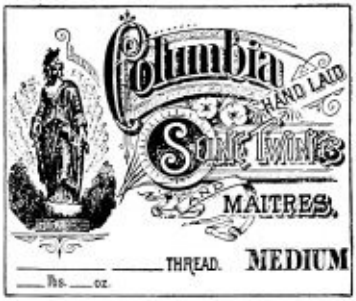
10 lb. Packages in 100 lb. Bales.

6 thread.	per lb.,	$0.33½
9 "	"	.31
12 "	"	.30½
16 to 60 thread	"	.30

Balls, Tubes, ½c advance in any size to order.

For Linen Gilling Thread, see page 640.

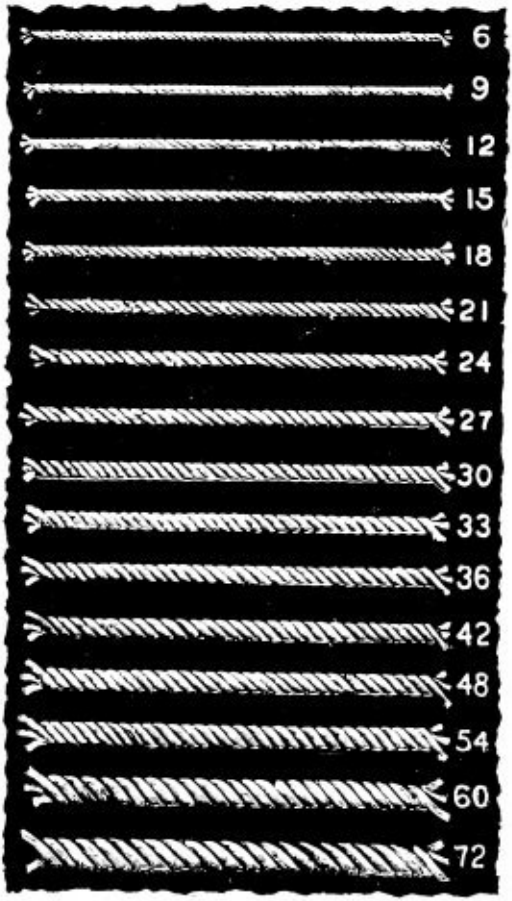
COTTON SEINE TWINE

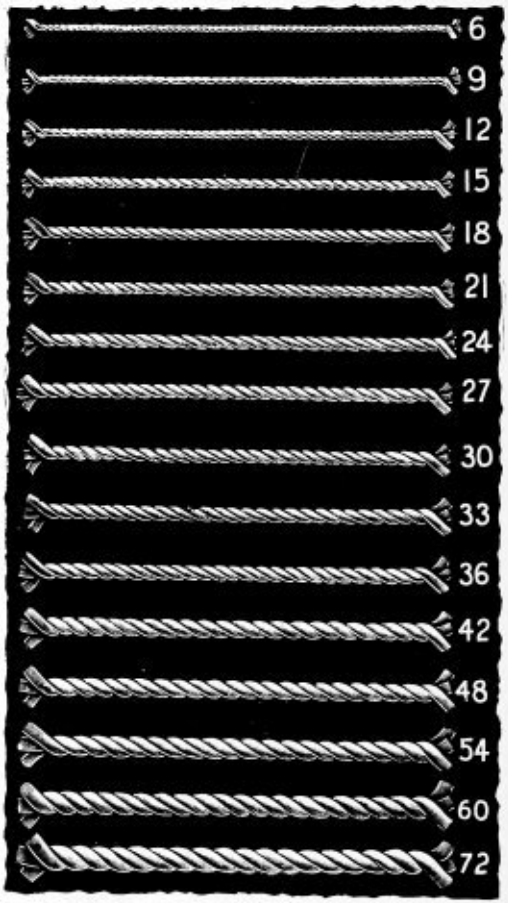


Medium Laid. 10-lb. Packages in 100-lb. Bales

CUTS ARE ACTUAL SIZES

Patent or Hard Laid. 10-lb. Packages in 100-lb. Bales





6-thread	per lb.,	$0.35	
9 "	"	.32	
12 "	"	.31	
15-42-thread	"	.30½	
Larger "	"	.30	

6-thread	per lb.,	$0.42	
9 "	"	.35½	
12 "	"	.33	
15-42-thread	"	.32	
Larger "	"	.31½	

MEDIUM COTTON SEINE TWINE—In Balls

9-thread,	½ lb.,	per lb.,	$....	21-thread,	½ lb.,	per lb.,	$....	36-thread,	½ lb.,	per lb.,	$....
12 "	½ "	"	....	24 "	½ "	"	....	36 "	1 "	"	....
15 "	½ "	"	....								

42-thread,	½ lb.,	per lb.,	$....		
42 "	1 "	"	....		
54 "	1 "	"	....		

HAND LAID MAITRE CORD

100 bales in 10-lb. packages. 60-10 to 144-10 ..... per lb., $0.30

Any size in Balls and Tubes to order.

WIRE ROPE

NOTES ON THE USES OF WIRE ROPE

DIFFERENT GRADES

Wire Rope is usually made of 6 strands wound around a hemp center, the strands being composed of 7, 12, or 19 wires, according to use they are intended for.

USES

Those with 19 wires are best adapted for hoisting purposes.

Those with 7 and 12 wires are best adapted for transmission of power, guys, rigging.

In no case should galvanized rope be used for running rope. One day's use scrapes off the coating of zinc, and rusting proceeds with twice the rapidity.

WORKING CAPACITY

For a safe working load, allow one-fifth to one-seventh of the ultimate strength, according to speed; so as to get good wear from the rope. When substituting Wire Rope for hemp rope, it is good economy to allow for the former the same weight per foot which experience has approved for the latter.

SIZE OF SHEAVES

Wire Rope is as pliable as new hemp rope of the same strength; the former will therefore run over the same sized sheaves and pulleys as the latter. But the greater the diameter of the sheaves, pulleys or drums, the longer Wire Rope will last. In the construction of machinery for Wire Rope, it will be found good economy to make the drums and sheaves as large as possible. The minimum size of drum is given in a column in the table.

STYLE OF SHEAVES

The grooves of cast-iron pulleys and sheaves should be filled with well seasoned blocks of hard wood, set on end, to be renewed when worn out. This end-wood will save wear and increase adhesion. The smaller pulleys or rollers which support the ropes on inclined planes, should be constructed on the same plan. When large sheaves run with very great velocity, the grooves should be lined with leather, set on end, or with India rubber. This is done in the case of all sheaves used in the transmission of power between distant points, by means of rope, which frequently run at the rate of 4,000 feet per minute.

SPEED

Experience has demonstrated that the wear increases with the speed. It is, therefore, better to increase the load than the speed.

PRESERVATION

To preserve Wire Rope, we recommend Dixon's Waterproof Graphite Grease. See page 388.

IRON OR STEEL

When the work is not too heavy, Iron Ropes, properly handled, will give satisfactory service.

Where greater strength is required, also lightness, Steel Ropes should be used.

But in substituting a steel rope for an iron running rope, the object in view should be to gain an increased wear from the rope rather than to reduce the size.

INCLINED PLAIN

For the benefit of those desiring to use Wire Rope on slopes, inclined planes, etc., we subjoin a table by which the strain produced by any load can easily be calculated.

The table gives the strain produced on a rope by a load of one ton of 2,000 lbs., an allowance for rolling friction being made. An additional allowance for the weight of the rope will have to be made.

Example: For an inclination of 25 feet in 100 feet, corresponding to an angle of 14½ degrees, a load of 2,000 lbs. will produce a strain on the rope of 497 lbs., and for a load of 8,000 lbs., the strain on the rope will be

$$\frac{497 \times 8000}{2000} = 1{,}988 \text{ lbs.}$$

A factor of safety of five to seven times should be taken; that is, the working load on the rope should only be one-fifth to one-seventh of its breaking strength. As a rule, ropes for shafts should have a factor of safety of five, and on inclined planes, where the wear is much greater, the factor of safety should be seven.

Elevation in 100 feet	Corresponding Angle of Inclination	Strain in Pounds on Rope from a Load of 2,000 lbs.	Elevation in 100 feet	Corresponding Angle of Inclination	Strain in Pounds on Rope from a Load of 2,000 lbs.
5	2 7/8°	112	95	43 1/2°	1,385
10	5 1/2°	211	100	45°	1,419
15	8 1/2°	308	105	46 1/2°	1,457
20	11 1/2°	404	110	47 3/4°	1,487
25	14 1/2°	497	115	49°	1,516
30	16 3/4°	586	120	50 1/4°	1,544
35	19 1/4°	673	125	51 1/2°	1,570
40	21 3/4°	754	130	52 1/2°	1,592
45	24 1/4°	832	135	53 1/2°	1,614
50	26 1/2°	905	140	54 1/2°	1,633
55	28 3/4°	975	145	55 1/2°	1,653
60	31°	1,040	150	56 1/4°	1,671
65	33 1/2°	1,100	155	57 1/4°	1,689
70	35°	1,156	160	58°	1,703
75	37°	1,210	165	58 3/4°	1,717
80	38 3/4°	1,260	170	59 1/2°	1,729
85	40 1/2°	1,304	175	60 1/4°	1,742
90	42°	1,347	...	...	...

CONSTRUCTION OF WIRE ROPE

Hoisting Rope

The 6 strands composed of 19 wires each, laid around a hemp center.

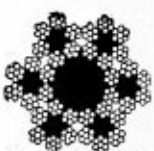
The 6 strands composed of 7 wires each, laid around a hemp center.

Transmission Rope

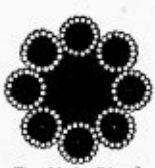
Galvanized Rigging and Guy Rope

The 6 strands composed of 7 or 12 wires each, laid around a hemp center.

Composed of six individual Ropes, laid about a hemp core. Each of these ropes consists of six strands of 7 wires each, also laid about hemp cores. Used principally for Hand Rope on Elevator and for Steering Rope for Steamers.



Swede's Iron Tiller Rope



English Steel Tiller Rope

Each strand is composed of 18 wires laid around a hemp center, the strands varying from 6 to 10, according to size of rope.

STANDARD HOISTING ROPE

19 Wires to Strand. Hemp Center

SWEDES IRON PLIABLE HOISTING ROPE

Diam. in inches	Prices per foot in Cents	Breaking Strain in tons of 2 000 pounds	Diam. of Hemp Rope of Equal Strength	Proper Working Load in tons of 2,000 lbs.	Aver'ge Weight per foot	Minimum Size of Drums or Sheaves in feet
1/4	6 1/2	1.2	9–16	0.24	0.10	3/4
5–16	6 3/4	1.7	5/8	0.34	0.15	1
3/8	7	2.5	7/8	0.50	0.22	1 1/2
7–16	7 1/2	3.4	1	0.68	0.30	2
1/2	8	4.4	1 1/8	0.88	0.39	2 1/4
9–16	10	5.5	1 5–16	1.10	0.50	2 3/4
5/8	12	6.8	1 1/2	1.36	0.62	3 1/2
3/4	16	9.7	1 5/8	1.94	0.89	4
7/8	20	13.	2	2.6	1.20	4 1/2
1	26	17.	2 1/4	3.4	1.58	5 1/4
1 1/8	33	21.	2 5/8	4.2	2.	6
1 1/4	40	25.	3 1/8	5.	2.45	6 1/2
1 3/8	48	31.	3 1/4	6.2	3.	7
1 1/2	57	36.	3 1/2	7.2	3.55	7 1/2
1 5/8	63	42.	4	8.4	4.15	8 1/2
1 3/4	80	48.	4 1/4	9.6	4.85	10
2	92	62.	4 3/4	12.4	6.30	12
2 1/4	117	78.	5 1–3	15.6	8.	13
2 1/2	140	95.	.....	18.9	9.85	15

PLOUGH STEEL HOISTING ROPE

Diameter in inches	Price per foot in Cents	Breaking Strain in tons of 2,000 pounds	Proper Working Load in tons of 2,000 lbs.	Average Weight per foot	Minimum Size of Drums or Sheaves in feet
1/4	12	3.00	0.60	0.10	2/3
5–16	12 1/4	4.50	0.90	0.15	7/8
3/8	12 1/2	6.55	1.31	0.22	1
7–16	13	8.85	1.77	0.30	1 1/2
1/2	14	11.40	2.28	0.39	2
9–16	16	14.50	2.90	0.50	2 1/2
5/8	19	18.	3.60	0.62	3
3/4	26	25.	5.00	0.89	3 1/2
7/8	34	34	6.80	1.20	3 3/4
1	43	44.	8.80	1.58	4 1/4
1 1/8	52	56.	11.20	2.00	4 1/2
1 1/4	63	67.	13.40	2.45	5
1 3/8	77	82.	16.40	3.00	5 1/4
1 1/2	93	96.	19.20	5.55	5 1/2
1 5/8	108	111.	22.20	4.15	6
1 3/4	135	128.	25.60	4.85	7 1/2
2	156	165.	33.00	6.30	8
2 1/4	200	208.	41.60	8.00	9
2 1/2	250	254.	50.88	9.85	10
2 3/4	300	305.	61.00	11.95	11

NOTE.— When made with Wire Center, the price per foot is 10 per cent extra.

NOTE.— When either the Iron or Steel Rope named above is galvanized or tinned, add 10 per cent to list price per foot.

DIXON'S WATERPROOF GRAPHITE GREASE

For Wire Ropes and Cables. Will resist even running water. See page 388.

CRUCIBLE CAST STEEL PLIABLE HOISTING ROPE

Diam. in inches	Price per foot in Cents	Breaking Strain in tons of 2,000 pounds	Diam. of Hemp Rope of Equal Strength	Proper Working Load in tons of 2,000 lbs.	Aver'ge Weight per foot	Minimum Size of Drums or Sheaves in feet
1/4	9	2.4	3/4	0.48	0.10	1/2
5–16	9 1/4	3.4	1	0.68	0.15	2/3
3/8	9 1/2	5.	1 1/8	1.00	0.22	1
7–16	10	6.8	1 1/4	1.36	0.30	1 1/4
1/2	11	8.8	1 1/2	1.76	0.39	1 1/2
9–16	12	11.	1 9–16	2.20	0.50	1 3/4
5/8	14	13.6	1 3/4	2.72	0.62	2 1/4
3/4	18	19.4	2 1/8	3.88	0.89	3
7/8	23	26.	2 5/8	5.20	1.20	3 1/2
1	30	34.	3	6.80	1.58	4
1 1/8	38	42.	3 3/8	8.40	2.00	4 1/2
1 1/4	46	50.	3 3/4	10.00	2.45	5
1 3/8	56	62.	4	12.4	3.00	5 1/2
1 1/2	66	72.	4 1/4	14.4	3.55	5 3/4
1 5/8	74	84.	4 3/4	16.8	4.15	6 1/4
1 3/4	93	96.	5 1/4	19.2	4.85	7 1/4
2	111	124.	.....	24.8	6.30	8
2 1/4	142	156.	.....	31.2	8.00	8 1/2
2 1/2	175	190.	.....	37.9	9.85	9 1/2
2 3/4	210	228.	.....	45.6	11.95	10

POWER STEEL ROPE

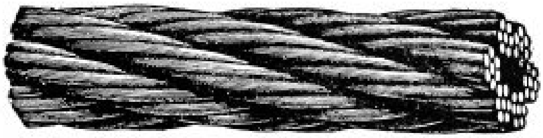
Registered Trade Mark

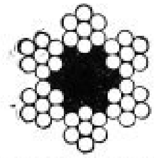
THE MOST POWERFUL WIRE ROPE MADE

Diam. in inches	Price per foot in Cents	Breaking Strain in tons of 2,000 pounds	Proper Working Load in tons of 2,000 lbs.	Average Weight per foot	Minimum Size of Drums or Sheaves in feet
3/8	14	7	1.40	0.22	2
7–16	15	10	2.00	0.30	2 1/2
1/2	17	13	2.75	0.39	2 3/4
9–16	19	15	3.00	0.50	3
5/8	22	20	4.00	0.64	4
3/4	31	30	6.00	0.89	5
7/8	36	36	7.20	1.20	6
1	49	50	10.00	1.58	7
1 1/8	58 1/2	63	12.60	2.00	8
1 1/4	71 1/2	76	15.20	2.45	9
1 3/8	89	95	19.00	3.00	10
1 1/2	111	115	23.00	3.55	11
1 5/8	126	130	26.00	4.15	12
1 3/4	169	160	32.00	5.25	13
2	189	200	40.00	6.30	14
2 1/4	226	235	47.00	8.00	15

HAULAGE OR STANDING ROPE

Six Strands, 7 Wires to the Strand





CRUCIBLE CAST STEEL

Diameter in inches	Price per ft. in cents	Breaking Strain in Tons of 2,000 lbs.	Proper Working Load in Tons of 2,000 lbs.	Average Weight per foot	Minimum Size of Drums of Sheaves in feet
9/32	4	2.8	0.56	0.125	1 1/2
5/16	4 1/2	3.4	0.68	0.15	1 3/4
3/8	5 1/2	4.8	0.96	0.22	2
7/16	6 1/2	6.6	1.32	0.30	2 1/4
1/2	7 1/2	8.4	1.68	0.39	2 1/2
9/16	9	10.6	2.12	0.50	3
5/8	11	13.2	2.64	0.62	3 1/2
11/16	13 1/2	15.8	3.16	0.75	4
3/4	16	18.6	3.72	0.89	4 1/2
7/8	22	24.	4.80	1.20	5
1	28	32.	6.40	1.58	5 3/4
1 1/8	36	40.	8.00	2.00	6 1/4
1 1/4	43	48.	9.60	2.45	7 1/4
1 3/8	51	58.	11.60	3.00	8
1 1/2	60	68.	13.60	3.55	8 1/2

PLOUGH STEEL

Diameter in inches	Price per ft. in cents	Breaking Strain in Tons of 2,000 lbs.	Proper Working Load in Tons of 2,000 lbs.	Average Weight per foot	Minimum Size of Drums of Sheaves in feet
9/32	5 1/2	3.65	0.73	0.125	1
5/16	6	4.35	0.87	0.15	1 1/4
3/8	6 1/2	6.35	1.27	0.22	1 1/2
7/16	8	8.55	1.71	0.30	2
1/2	11	11.	2.20	0.39	2 1/2
9/16	14	14.	2.80	0.50	2 3/4
5/8	17	17.	3.40	0.62	3
11/16	20	21.	4.20	0.75	3 1/2
3/4	25	24.	4.80	0.89	4
7/8	32	32.	6.40	1.20	5
1	41	42.	8.40	1.58	5 1/2
1 1/8	51	53.	10.60	2.00	6 1/4
1 1/4	61	64.	12.80	2.45	7 1/4
1 3/8	75	78.	15.60	3.00	8
1 1/2	90	91.	18.20	3.55	8 1/2

SWEDES IRON

Diameter in inches	Price per ft. in cents	Breaking Strain in Tons of 2,000 lbs.	Proper Working Load in Tons of 2,000 lbs.	Average Weight per foot	Minimum Size of Drums of Sheavas in feet
9/32	3 1/4	1.4	0.28	0.125	2 1/4
5/16	3 3/4	1.7	0.34	0.15	2 1/2
3/8	4 1/2	2.4	0.48	0.22	2 3/4
7/16	5 1/2	3.3	0.66	0.30	3 1/4
1/2	6 1/2	4.2	0.84	0.39	4
9/16	8	5.3	1.06	0.50	4 1/2
5/8	10	6.6	1.32	0.62	5 1/4
11/16	12	7.9	1.58	0.75	6
3/4	14	9.3	1.86	0.89	6 3/4
7/8	17 1/2	12.	2.40	1.20	7 1/2
1	23	16.	3.20	1.58	8 1/2
1 1/8	29	20.	4.00	2.00	9 1/2
1 1/4	36	24.	4.80	2.45	10 3/4
1 3/8	43	29.	5.80	3.00	12
1 1/2	51	34.	6.80	3.55	13

WIRE SASH AND BELL CORDS

COPPER, IRON, TINNED AND GALVANIZED

Composed of 6 Strands and a Cotton Center, 7 Wires to the Strand.

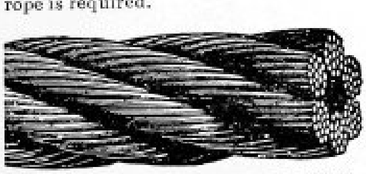
Diameter	Per Foot			Weight per ft. in lbs.		Brk'g Strain in lbs.	
	Swedes Iron	Tinned or Galv'd	Copper	Iron	Copper	Iron	Copper
1/4	3	4	9	.100	.115	2200	1265
7/32	2 3/4	3 1/2	7 1/2	.076	.087	1809	1022
3/16	2 1/4	3	6	.056	.064	1417	792
1/8	1 3/4	2 1/4	4 1/2	.025	.029	790	435
3/32	1 1/2	2	3 1/2	.014	.016	510	272
1/16	1 1/4	1 3/4	3	.006	.007	262	140

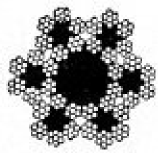
Note—When made with Wire Center the price per foot is 10 per cent extra.

Note—When either the Iron or Steel Rope named above is galvanized or tinned, add 10 per cent to list price per foot.

TILLER ROPE

Tiller Ropes are used for steering ropes on steamers, hand ropes for elevators, and in any place where a smooth and flexible rope is required.

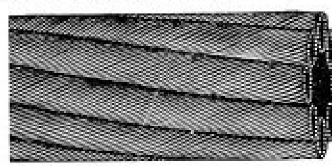


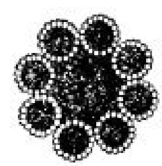


SWEDES IRON

They are composed of 6 ropes laid around a hemp center, each one of the ropes being made of 6 strands of 7 wires, thus making a rope of 252 wires.

Diameter.......	1	7/8	3/4	5/8	9/16	1/2	7/16	3/8	5/16	1/4
Per foot........	33c	27c	22c	17c	14c	11c	10c	9c	8c	7 1/2c



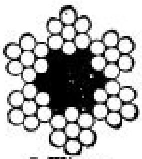


ENGLISH STEEL

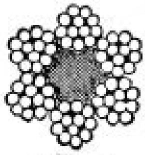
Each strand is composed of 18 wires laid around a hemp center, the strands varying.

Diameter........	1 1/4	1 1/8	1	7/8	3/4	5/8	1/2	3/8
Per foot.........	37c	30c	27c	23c	15c	12c	9c	7 1/4c

GALVANIZED WIRE ROPE



GALVANIZED "CHARCOAL" IRON WIRE ROPES



7 Wires

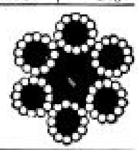
For Ships' Rigging. Stays, Guys, etc.

12 Wires

Diameter in inches	Circumference in inches	7 Wires Coarse Laid, Price per foot	12 Wires Fine Laid, Price per foot	Weight per foot in pounds	Breaking Strain in tons of 2,000 pounds	Circum. of Hemp Rope, Equal Strength inches
1¾	5½	44	46	4.85	44.	11
1 11/16	5¼	41	43	4.40	40.	10½
1⅝	5	38	40	4.00	36.	10
1½	4¾	35	37	3.60	32.	9½
1 7/16	4½	31	33	3.25	29.	9
1⅜	4¼	27	29	2.90	26.	8½
1¼	4	24	25	2.55	23.	8
1 3/16	3¾	21	22	2.25	20.	7½
1⅛	3½	18	19	1.95	18.	7
1 1/16	3¼	16	17	1.70	15.	6½
1	3	14	15	1.44	13.	6
⅞	2¾	12		1.21	11.	5½
13/16	2½	10		1.00	9.	5
¾	2¼	9		.81	7.3	4½
⅝	2	8		.64	5.8	4¼
9/16	1¾	7		.49	4.4	4
½	1½	6		.36	3.2	3½
7/16	1¼	5		.25	2.3	3
⅜	1⅛	4		.20	1.8	2⅝
5/16	1	3½		.16	1.4	2½
9/32	⅞	3		.123	1.1	2
5 Strands, 7 Wires Each						
¼	¾	2½		.090	.81	1½
7/32	⅝	2¼		.063	.56	1¼
3/16	½	2		.040	.36	1⅛

GALVANIZED STEEL HAWSERS

6 Strands and a Hemp Center, each Strand consisting of 12 Wires and a Hemp Core

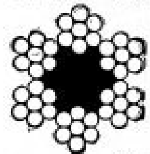


Circumference in inches	Diameter in inches	Price per foot in cents	Weight per foot in pounds	Breaking Strain in tons of 2,000 lbs.
6½	2 1/16	78	4.56	83.
6¼	2	72	4.20	77.
6	1 15/16	67	3.88	71.
5¾	1 13/16	61	3.56	66.
5½	1¾	56	3.25	61.
5¼	1 11/16	53	2.95	57.
5	1⅝	48	2.70	53.
4¾	1½	44	2.42	45.
4½	1 7/16	41	2.18	42.
4¼	1⅜	37	1.94	39.
4	1¼	34	1.72	32.
3¾	1 3/16	30	1.51	29.
3½	1⅛	27	1.32	27.
3¼	1 1/16	25	1.14	24.
3	1	21	.97	21.5
2¾	⅞	19	.81	16.4
2½	13/16	16	.67	14.4
2¼	¾	14	.54	12.3

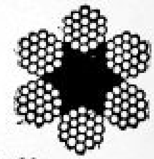
LIST FOR LABOR OF SPLICING ROPE TO MAKE ENDLESS

Diameter of Rope in inches	List for Splicing	Diameter of Rope in inches	List for Splicing
1½ to 1¼	$4.50	7/16 to ⅜	$3.00
1⅛ " ⅞	4.00	5/16 " ¼	2.50
¾ " ½	3.50		

The charge named to be in addition to the charge made for rope used in making the splice. The prices named to apply only on wire ropes spliced at our store. Special charge will be made for splicing done elsewhere, such charge depending on the circumstances of each individual case.



GALVANIZED CAST STEEL YACHT RIGGING



7 Wires

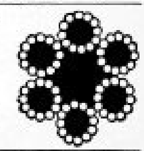
6 Strands. Hemp Center. 7 or 19 Wires to the Strand

19 Wires

Circumference in inches	Diameter in inches	Price per foot in Cents: 19 Wires to Strand	Price per foot in Cents: 7 Wires to Strand	Weight per foot in pounds	Breaking Strain in tons of 2,000 lbs.	Cir. of New Manila Rope of Equal Strength
4	1⅜	50	48	2.55	53.	13
3¾	1¼	46	44	2.25	47.	12
3½	1⅛	42	40	1.95	41.	11
3¼	1 1/16	38	36	1.70	36.	10
3	1	33	31	1.44	31.	9
2¾	⅞	26	25	1.21	26.	8¼
2½	13/16	23	21	1.00	22.	8
2¼	¾	20	18	.81	17.6	7
2	⅝	16	12	.64	14.0	6
1¾	9/16	13½	10	.49	10.8	5¼
1½	½	12	8½	.36	8.1	4¾
1⅜	15/32	11¼	8	.30	6.8	4½
1¼	7/16	11	7½	.25	5.7	4¼
1⅛	⅜	10½	6¼	...	...	...
1	5/16	10	5	.16	3.7	3

GALVANIZED IRON AND CAST STEEL COMPOUND RUNNING ROPE

6 Strands. Hemp Center. Each Strand Consists of 12 Wires and a Hemp Core



Circum. in inches	Diameter in inches	Price per foot in Cents: Iron	Price per foot in Cents: Cast Steel	Weight per foot in lbs.	Breaking Strain in tons of 2,000 lbs.: Iron	Breaking Strain in tons of 2,000 lbs.: Cast Steel
3¼	1 1/16	22	30	1.14	12.0	24.0
3	1	20	27	.97	10.7	21.5
2¾	⅞	17	23	.81	8.21	16.4
2½	13/16	14½	19	.67	7.20	14.4
2¼	¾	11½	15	.54	6.13	12.3
2	⅝	9	12	.43	4.29	8.58
1¾	9/16	8	10	.33	3.47	6.94
1½	½	7	9	.24	2.78	5.56
1¼	7/16	6½	8½	.17	2.15	4.30
1⅛	⅜	6	7¼	...	....	....
1	5/16	5½	7	.11	1.14	2.28

GALVANIZED STRAND OR GUY ROD

For Guys, Signal Cord, Street Railways, Telephone Companies, Electric Light Plants, Fencing, etc.

Approximate Diameter	Price per 100 feet	Weight per 1,000 ft., lbs.	Approximate Strength, lbs.
½	$5.50	510	8,500
7/16	4.50	415	6,500
⅜	3.50	295	5,000
5/16	2.25	210	3,800
¼	1.75	125	2,300
7/32	1.50	95	1,800
3/16	1.25	75	1,400
5/32	1.15	55	900
⅛	1.00	32	500
3/32	.80	20	400

SEIZING STUFF

Made from Best Charcoal Wire

Seven Wires, No.	18	19	20	21
Weight per 100 feet	4	3	2½	2
Price per 100 feet	55	45	40	35

PHOSPHOR-BRONZE WIRE ROPE

HOISTING

Hoisting Rope

With 6 Strands, 19 Wires each, Hemp Center

Diameter inches	Estimated Breaking Strain, lbs.	Proper Working Load, lbs.	Minimum Size of Drum, feet	Price per Foot
1/8	500	50	.....	$0.08
3/16	1,000	100	.....	.10
1/4	1,800	180	.....	.14
5/16	3,000	300	1¼	.16
3/8	5,000	500	1½	.22
7/16	6,500	650	1¾	.26
1/2	8,000	1,000	2	.30
5/8	12,000	2,000	3	.50
3/4	18,000	3,500	3½	.72

Large sizes and wire center, special prices.

TRANSMISSION AND RIGGING ROPES

With 6 Strands, 7 Wires to the Strand, Hemp Center

Diameter, inches	Estimated Breaking Strain, lbs.	Proper Working Load, lbs.	Price per Foot
1/4	1,500	250	$0.10
5/16	2,500	400	.14
3/8	4,500	800	.18
7/16	6,000	1,000	.24
1/2	8,000	1,500	.30
5/8	12,000	2,000	.48
3/4	18,000	4,500	.70

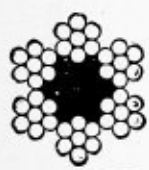
Large sizes and wire center, special prices.

TILLER ROPE

Cotton and Hemp Centers. Very Flexible

Diameter, inches	Number of Wires	Estimated Breaking Strain, lbs.	Price per Foot
1/8	114	500	$0.08
3/16	114	1,000	.10
1/4	252	1,500	.16
5/16	252	2,000	.20
3/8	252	3,500	.24
7/16	252	4,500	.28
1/2	252	6,000	.32
5/8	252	8,000	.42
3/4	252	11,000	.60

SASH CORD



With 6 Strands, 7 Wires each, Hemp Center

Diameter, inches	Estimated Breaking Strain, lbs.	Price per Foot	Diameter, inches	Estimated Breaking Strain, lbs.	Price per Foot
1/16	300	$0.03	3/16	1,000	$0.07
5/32	500	.04	7/32	1,200	.08
1/8	600	.05	1/4	1,500	.10

Wheels Bored to fit Shaft, and Lined with Patent Rubber

WHEELS FOR TRANSMISSION OF POWER BY WIRE ROPE

1½	feet diam.	each, $12.00	7	feet diam.	each, $100.00
2	" "	" 15.00	8	" "	" 130.00
2½	" "	" 20.00	9	" " in halves	" 175.00
3	" "	" 25.00	10	" " "	" 250.00
4	" "	" 34.00	12	" " "	" 325.00
5	" "	" 50.00			
6	" "	" 64.00			

Special prices for larger wheels.

HEAVY IRON HOISTING SHEAVES

Turned Groove

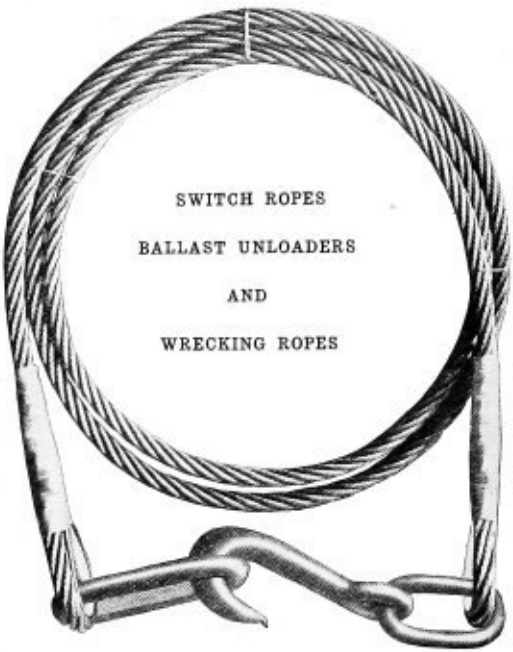
Diam.	Each	Weight.	Diam.	Each	Weight	Diam.	Each	Weight	Diam.	Each	Weight
1½ ft.	$12.00	75	3½ ft.	$30.00	180	6 ft.	$75.00	450	9 ft.	.....	.....
2 ft.	15.00	85	4 ft.	34.00	225	7 ft.	100.00	...	10 ft.	.....	.....
2½ ft.	20.00	105	4½ ft.	42.00	290	8 ft.	135.00	...	12 ft.	.....	.....
3 ft.	26.00	140	5 ft.	50.00	350	....	.....	...	...	.....	.....

For Manila Rope Transmission Sheaves, see page 406.

Patent Rubber Lining for Transmission Wheels.....per lb. $0.60

SWITCH ROPES

"POWERSTEEL" LOCOMOTIVE SWITCHING ROPES



SINGLE PATTERN

Hook and Thimble in One End; Thimble and Link in Other End

Length 30 feet, Complete.

Diameter	Price Each	Breaking Strain in Tons of 2000 lbs.	Diameter of Manila Rope of Equal Strength	Weight of Wire Switch Rope 30 Feet, Complete	Weight of Manila Switch Rope 30 Feet, Complete
1 inch	$23.70	50	4	85 lbs.	270 lbs.
1⅛ "	29.00	63	4¼	115 "	315 "
1¼ "	33.40	76	4½	135 "	365 "

Ballast Unloader Ropes and Wrecking Ropes made according to specifications and orders promptly executed.

PUSH POLES

YOUNG WHITE CEDAR

10 feet long, 5 inch diameter center, 4½ inch diameter ends, with 2 x ¼ inch iron band.

Price.....per dozen $36.00

RAILROAD SWITCH OR WRECKING CHAIN

Grab Hook on One End; Long Link on the Other End

See page 63.

OLD COLONY MANILA SWITCH ROPES

We can furnish any length and size at short notice. Prices on application.

CRUCIBLE CAST STEEL WIRE SWITCHING ROPES

SINGLE PATTERN

Hook and Thimble in One End; Thimble and Link in Other End. List of Fittings Spliced In

Dia. Rope	1¾	1⅝	1½	1⅜	1¼	1⅛	1	⅞	¾
Price per Set	25.00	21.25	17.25	13.25	10.00	9.50	7.00	6.75	4.00

DOUBLE PATTERN

Hook, Thimble and Link in One End; Thimble and Two Links in Other End. List of Fittings Spliced In

Dia. Rope	1¾	1⅝	1½	1⅜	1¼	1⅛	1	⅞	¾
Price per Set	30.00	25.75	21.25	16.75	13.00	12.00	9.00	8.50	5.50

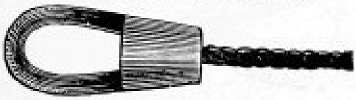
LIST PRICE CRUCIBLE CAST STEEL HOISTING ROPE

Dia. Rope.....	1¾	1⅝	1½	1⅜	1¼	1⅛	1	⅞	¾
Price.....per Foot	.93	.74	.66	.56	.46	.38	.30	.23	.18
Breaking Strain in Tons.....	96	84	72	62	50	42	34	26	19.4

WIRE ROPE FASTENINGS

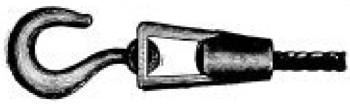
MADE OF BEST CHARCOAL IRON

CLOSED SOCKETS



Diameter of Rope in inches	Iron or Steel Rope	
	Loose	Fastened
2¼	$21.00	$32.00
2	16.00	25.50
1¾	13.00	21.00
1⅝	12.00	18.00
1½	6.80	11.80
1⅜	6.00	10.25
1¼	4.50	8.00
1⅛	3.30	6.15
1	2.40	4.65
⅞	1.85	3.85
¾	1.65	3.15
⅝	1.35	2.65
9/16	1.10	2.35
½	1.10	2.25
7/16	.85	2.00
⅜	.85	1.85
5/16	.70	1.60
¼	.70	1.60

EXTRA HEAVY DOUBLE SWIVEL HOOK SOCKETS

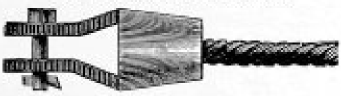


Diameter of Rope in inches	For Iron and Steel Rope	
	Loose	Fastened
1½	$36.00	$41.00
1¼	25.00	28.50
1⅛	18.00	20.85
1	11.40	13.65
⅞	9.50	11.50
¾	8.00	9.50
⅝	7.20	8.50
9/16	6.60	7.85
½	6.00	7.15
7/16	5.35	6.50
⅜	4.70	5.70

HOOKS AND THIMBLES

Diam. of Rope in inches	For Steel Rope		For Iron Rope	
	Loose	Fast'n'd	Loose	Fast'n'd
1½	$7.00	$13.50	$5.00	$11.00
1⅜	5.40	11.15	3.40	8.65
1¼	4.60	9.20	2.65	6.90
1⅛	4.40	8.15	2.40	5.90
1	3.75	6.70	1.90	4.65
⅞	2.90	5.35	1.40	3.70
¾	1.85	3.75	1.10	2.85
⅝	1.40	2.85	.85	2.20
9/16	1.10	2.40	.75	1.95
½	.80	2.05	.65	1.80
7/16	.75	1.95	.60	1.70
⅜	.70	1.85	.55	1.60
5/16	.65	1.75	.50	1.50
¼	.65	1.75	.50	1.50

OPEN SOCKETS



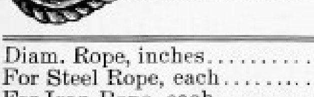
Diameter of Rope in inches	Iron or Steel Rope	
	Loose	Fastened
2¼	$23.00	$34.00
2	16.50	26.00
1¾	15.50	23.50
1⅝	13.00	19.00
1½	8.00	13.00
1⅜	7.50	11.75
1¼	6.10	9.60
1⅛	4.50	7.35
1	3.15	5.40
⅞	2.50	4.50
¾	2.10	3.60
⅝	1.65	2.95
9/16	1.35	2.60
½	1.35	2.50
7/16	1.00	2.15
⅜	1.00	2.00
5/16	.85	1.75
¼	.85	1.75

HOOK AND SOCKET

Diam. of Rope in inches	For Steel Rope		For Iron Rope	
	Loose	Fast'n'd	Loose	Fast'n'd
1½	$14.50	$19.50	$12.50	$17.50
1⅜	12.30	16.55	10.25	14.50
1¼	10.00	13.50	8.00	11.50
1⅛	8.25	11.10	6.25	9.10
1	6.50	8.75	4.60	6.85
⅞	5.25	7.25	3.70	5.70
¾	3.85	5.35	3.00	4.50
⅝	2.90	4.20	2.30	3.60
9/16	2.45	3.70	2.00	3.25
½	2.10	3.25	1.95	3.10
7/16	1.70	2.85	1.55	2.70
⅜	1.65	2.65	1.50	2.50
5/16	1.45	2.35	1.25	2.15
¼	1.45	2.35	1.25	2.15

SISTER HOOKS

Diam. of Rope in inches	For Steel Rope		For Iron Rope	
	Loose	Fast'n'd	Loose	Fast'n'd
1½	$7.00	$13.50	$5.00	$11.00
1⅜	5.40	11.15	3.40	8.65
1¼	4.60	9.20	2.65	6.90
1⅛	4.40	8.15	2.40	5.90
1	3.75	6.70	1.90	4.65
⅞	2.90	5.35	1.40	3.70
¾	1.85	3.75	1.10	2.85
⅝	1.40	2.85	.85	2.20
9/16	1.10	2.40	.75	1.95
½	.80	2.05	.65	1.80
7/16	.75	1.95	.60	1.70
⅜	.70	1.85	.55	1.60
5/16	.65	1.75	.50	1.50
¼	.65	1.75	.50	1.50



OVAL AND ROUND THIMBLES, SPLICED IN

Diam. Rope, inches	1¾	1½	1¼	1⅛	1	⅞	¾	⅝	9/16	½	7/16	⅜	5/16	¼
For Steel Rope, each	$8.50	6.50	4.70	3.90	3.00	2.55	2.00	1.55	1.30	1.25	1.20	1.15	1.10	1.10
For Iron Rope, each	$7.00	6.00	4.35	3.65	2.85	2.40	1.85	1.45	1.20	1.15	1.10	1.05	1.00	1.00

WIRE ROPE FASTENINGS

They will not slip or break. They are light and durable.

INCH			EACH	INCH			EACH
1/4	diameter	rope..	$ .35	1 1/8	diameter	rope..	$ .95
5/16	"	" ..	.35	1 1/4	"	" ..	1.10
3/8	"	" ..	.40	1 3/8	"	" ..	1.25
7/16	"	" ..	.45	1 1/2	"	" ..	1.50
1/2	"	" ..	.45	1 5/8	"	" ..	3.50
5/8	"	" ..	.55	1 3/4	"	" ..	5.50
3/4	"	" ..	.65	2	"	" ..	7.50
7/8	"	" ..	.75	2 1/4	"	" ..	9.50
1	"	" ..	.85	2 1/2	"	" ..	11.50

BULLDOG CLIP

Bolt is wrought iron. Plate is malleable.

Size Rope	Each	Size Rope	Each
1/4	$0.25	7/8	$0.45
5/16	.25	1	.50
3/8	.25	1 1/8	.60
1/2	.30	1 1/4	.65
5/8	.35	1 3/8	.70
3/4	.40	1 1/2	.75

WIRE ROPE CLAMP

5/16	in. diam.,	each,	$0.25	1 1/16	in. diam.,	each,	$0.65
3/8	" "	"	.28	1 1/8	" "	"	.75
1/2	" "	"	.30	1 1/4	" "	"	1.10
5/8	" "	"	.35	1 1/2	" "	"	1.50
3/4	" "	"	.40	1 3/4	" "	"	4.00
7/8	" "	"	.50	2	" "	"	5.00
1	" "	"	.60	2 1/2	" "	"	8.00

FERRY TRAVELERS

With single 12 inch common sheave..... $6.00
With two 10 inch common sheaves..... 9.00

STEEL WIRE ROPE THIMBLES

Width of Score	Galvanized per dozen	Plain Brass per dozen
3/16 inch	$0.60	$1.50
1/4 "	.60	1.65
5/16 "	.72	1.75
3/8 "	.84	1.80
7/16 "	.96	1.95
1/2 "	1.08	2.10
9/16 "	1.20	2.25
5/8 "	1.32	2.40
3/4 "	1.56	3.00
7/8 "	1.68	....
1 "	2.16	....
1 1/16 "	3.36	....
1 1/4 "	3.96	....
1 1/2 "	6.00	....
1 5/8 "	7.80	....
1 3/4 "	9.00	....
1 7/8 "	11.40	....
2 "	13.20	....
2 1/4 "	19.00	....
2 1/2 "	25.00	....

HEAVY, EXTRA LARGE WIRE ROPE THIMBLES

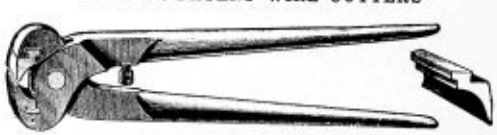
Width of Score	Galvanized per dozen	Size of Score	Galvanized per dozen
1/4 inch	$1.20	1 inch	$3.00
5/16 "	1.20	1 1/8 "	3.96
3/8 "	1.32	1 1/4 "	4.56
7/16 "	1.44	1 3/8 "	5.28
1/2 "	1.56	1 1/2 "	6.96
5/8 "	1.92	1 7/8 "	15.00
3/4 "	2.16	2 "	18.00
7/8 "	2.40		

STEEL YACHT WIRE ROPE THIMBLES

For rigging where small eye is required.

Width of Score	Extreme Length	Galvanized per doz.
3/16 inch	1 1/8 inches	$0.60
1/4 "	1 1/4 "	.60
5/16 "	1 5/8 "	.72
3/8 "	1 3/4 "	.84

CAREWS PATENT WIRE CUTTERS



Cutters

Size, inches	6	8	10	12	14
Each	$1.75	2.00	2.25	2.60	3.00

Extra Jaws

For size, inches	6	8	10	12	14
Per Pair	$0.55	.60	.65	.70	.75

TURNBUCKLES

DROP FORGED

With Right and Left Stub Bolt Ends

Without Stub Ends

Diameter inches	6 inch Opening Each	9 inch Opening Each	12 inch Opening Each	Diameter inches	6 inch Opening Each	9 inch Opening Each	12 inch Opening Each
3/8	$0.40	$0.50	$0.60	1 3/4	$2.00	$2.50	$3.00
7/16	.42	.53	.63	1 7/8	2.25	2.82	3.38
1/2	.45	.57	.68	2	2.65	3.31	3.98
9/16	.48	.60	.72	2 1/8	3.10	3.88	4.65
5/8	.50	.63	.75	2 1/4	3.50	4.38	5.25
3/4	.63	.79	.95	2 3/8	4.00	5.00	6.00
7/8	.75	.94	1.13	2 1/2	4.50	5.63	6.75
1	.88	1.10	1.32	2 5/8	5.00	6.25	7.50
1 1/8	1.00	1.25	1.50	2 3/4	5.50	6.88	8.25
1 1/4	1.25	1.57	1.88	2 7/8	6.00	7.50	9.00
1 3/8	1.38	1.73	2.07	3	6.50	8.13	9.75
1 1/2	1.50	1.88	2.25	3 1/4	8.00	10.00	12.00
1 5/8	1.75	2.19	2.63	3 1/2	10.00	12.50	15.00

In ordering, specify opening. Longer openings to order.

With Hook and Eye

Outside Diameter of Screw, inches	Length in the Clear Between Heads, inches	Galvanized Each	Plain Each
3/16	3 1/2	$0.95	$0.80
1/4	4	1.00	.85
5/16	4 1/4	1.10	.90
3/8	4 1/2	1.30	1.10
7/16	5	1.50	1.25
1/2	6	1.80	1.55
9/16	7	2.10	1.85
5/8	8	2.40	2.00
3/4	9	3.50	2.75
7/8	10	4.25	3.50
1	11	5.50	4.25
1 1/8	12	7.00	5.25
1 1/4	13	8.25	6.25
1 3/8	14	9.50	7.50
1 1/2	15	11.00	9.00
1 5/8	16	15.00	13.00
1 3/4	16	20.00	17.00
2	16	28.00	25.00

We can furnish to order with two hooks, two eyes, or with eye and shackle.

TURNBUCKLES

SLEEVE

GALVANIZED WROUGHT IRON

5/16 inch	each,	$1.25
3/8 "	"	1.50
7/16 "	"	1.75
1/2 "	"	2.00
9/16 "	"	2.25
5/8 "	"	2.75
3/4 "	"	4.00

PIPE

GALVANIZED WROUGHT IRON

Shackle and Eye, Right and Left Hand Threads

We can furnish to order hook and eye, two eyes, or two shackles.

Outside Diameter of Screw, inches	Length of Pipe, inches	Each
1/4	5 1/2	$1.00
5/16	5 3/4	1.10
3/8	6 1/4	1.30
7/16	7	1.50
1/2	8 1/4	1.80
9/16	10	2.10
5/8	10 1/2	2.40
3/4	13	3.50
7/8	16	4.25
1	18	5.50

EXTRA HEAVY PIPE

WROUGHT IRON

Outside Diameter of Screw inches	Length of Pipe, inches	Galvanized Each	Plain Each
1 1/8	16	$8.50	$7.50
1 1/4	16	11.00	9.50
1 3/8	16	13.50	11.50
1 1/2	16	16.00	14.00
1 5/8	16	19.00	17.00
1 3/4	16	23.00	20.00
1 7/8	16	28.00	24.00
2	16	33.00	28.00

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

CHAIN

COMMON STRAIGHT LINK COIL CHAIN

This grade is made of first-class iron, and welded by experienced workmen. It is a good merchantable Chain for general use.

Size	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1	1 1/16	1 1/8	1 3/16	1 1/4
Breaking Test, lbs.	1400	2400	5000	7000	9600	12400	15600	20000		30000		40000		50000		65000		80000
Proof Test, lbs.	700	1200	2500	3500	4800	6200	7800	9200		15000		20000		25000		32500		40000
Safe Working Load, lbs.	465	800	1650	2300	3200	4000	5000	6000		10000		13000		16000		21000		26000
Outside Length Links, inches.	1 3/8	1 5/16	1 13/16	2 1/8	2 3/8	2 5/16	2 7/8	3 1/8	3 1/16	3 5/8	3 7/8	4 1/4	4 1/2	4 3/4	5 1/16	5 5/8	5 7/8	6 1/8
Outside Width Links, inches.	3/4	1	1 3/16	1 7/16	1 5/8	1 13/16	2 1/16	2 1/4	2 7/16	2 5/8	2 7/8	3	3 1/4	3 1/2	3 5/8	3 3/4	3 7/8	4 1/4
Links per foot.	13	12	11	10	9	8	7 1/2	7	6 1/2	5 1/2	5 1/4	5	4 7/8	4 1/2	4 1/4	4 1/8		3 5/8
No. feet per 100 lbs	200	153	90	64	50	38	30	24	20	17	14 3/4	12 1/2	11	10	9	7 7/8	7	6 1/2
Weight in lbs. per 100 feet.	50	75	110	155	200	265	325	420	500	590	700	800	900	1000	1100	1300	1400	1500
Price per lb.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

"BB" COIL CHAIN

Tested and certificate furnished. This Chain is made of extra quality iron, which will stand a tensile strain of 52,200 lbs. to the square inch. It is welded with extra care, and dollied to make welds smooth.

Size	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	1	1 1/8	1 1/4
Breaking Test, lbs.	1540	2640	5500	7700	10560	13640	17160	21120	25300	31360	35640	41360	54200	64900	80300
Proof Test, lbs.	770	1320	2750	3850	5280	6820	8580	10560	12650	15180	17820	20680	27100	32450	40150
Safe Working Load, lbs.	510	880	1830	2500	3500	4400	5700	7000	8000	10000	11500	12500	18000	21000	26000
Outside Length Links, inches.	1 5/16	1 1/2	1 11/16	2 1/16	2 1/4	2 5/8	2 13/16	3 1/8	3 7/8	5 5/8	4	4 1/4	4 7/8	5 1/4	5 3/4
Outside Width Links, inches.	7/8	1	1 1/16	1 7/8	1 1/16	1 3/4	2	2 1/4	2 7/16	2 5/8	2 7/8	3	3 1/2	3 7/8	4 1/4
Links per foot.	14	13	11 3/4	11	9 3/4	8 3/4	8	7 1/4	6 5/8	5 3/4	5 1/2	5 1/8	4 1/2	4 1/4	3 3/4
No. feet per 100 lbs.	182	125	87	60	47	36	30	24	20	17	14	12 1/2	10	8	6 1/2
Weight in lbs. per 100 feet	55	80	115	165	215	275	330	425	515	600	700	775	1000	1250	1500
Price per lb.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

For Chain and Anchor Shackles, see pages 620 and 621.

CHAIN

"CRANE" OR "BBB" CHAIN

Tested and certificate furnished. This Chain is made of refined and re-rolled iron, that is very tough and fibrous, and will stand a tensile strain of 53,800 lbs. to the square inch. It is welded with special care and dollied. This is a chain that may be depended upon where strength and durability are required.

Size	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	1	1 1/8	1 1/4
Breaking Test ..... lbs.	1800	3000	6400	8850	12200	15700	19740	24300	29100	34950	41000	47550	62400	74600	92350
Proof Test ..... "	900	1500	3200	4425	6100	7850	9870	12150	14550	17475	20500	23780	31200	37300	46175
Safe Working Load ..... "	600	1000	2100	2900	4000	5000	6500	8000	19700	11600	13500	15500	20800	24800	30700
Outside Length Links ..... inches	1 5/16	1 1/2	1 11/16	2 1/16	2 1/4	2 5/8	2 13/16	3 1/8	3 3/8	3 5/8	4	4 1/4	4 7/8	5 1/4	5 5/8
" Width " ..... "	3/8	1	1 1/4	1 3/8	1 1/2	1 3/4	2	2 1/8	2 1/4	2 3/8	2 7/8	3	3 1/2	3 7/8	4 1/4
Links ..... per foot	14	13	11 3/4	11	9 3/4	8 3/4	8	7 1/8	6 5/8	5 3/4	5 1/2	5 1/4	4 1/2	4 1/4	3 3/4
No. Feet ..... per 100 lbs.	182	125	87	60	47	36	30	24	20	17	14	12 1/2	10	8	6 1/2
Weight in lbs ..... per 100 ft.	55	80	115	165	215	275	330	425	515	600	700	775	1000	1250	1500
Price ..... per lb.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

"DREDGE" CHAIN

Tested and certificate furnished. This is the best Chain made. The iron used is special Dredge quality, refined and re-rolled. It is tough and fibrous, and made hard to prevent wearing rapidly. This iron will stand a tensile strain of 54,500 lbs. to the square inch. The welding of our Dredge quality Chain is entrusted only to the most experienced workmen, and none but those thoroughly competent and reliable are permitted to make this grade of chain. It is carefully inspected both before and after testing.

Size	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2
Breaking Test ..... lbs.	4000	6000	9000	12000	16000	20000	25000	36000	49000	62500	80000	96000	140000	185000	225000
Proof Test ..... "	1000	3400	4700	6000	8800	11000	13000	18000	24000	32000	39000	48000	69000	96000	120000
Safe Working Load ..... "	1330	2000	3000	4000	5330	6660	8330	12000	16330	20830	26660	32000	46660	61630	75000
Outside Length Links ..... inches	1 1/2	1 13/16	2 1/16	2 1/4	2 5/8	2 5/8	5	3 1/2	4	4 5/8	5 1/8	5 3/4	7	8	9 1/4
Outside Width Links ..... "	1	1 1/8	1 1/8	1 7/16	1 11/16	1 7/8	2 1/8	2 1/2	2 7/8	3 1/4	3 3/4	4 1/8	5	5 3/4	6 1/2
Weight per Foot ..... lbs.	5/8	1 1/10	1 1/3	2 1/16	2 3/4	3 1/3	4 1/4	6	8	10 1/2	13 1/2	16 1/2	24	32	42
Price ..... per lb.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

SPECIAL STEEL LOGGING CHAIN

This Special Steel Chain is the result of a long series of experiments to obtain the greatest possible strength. Each piece is tested before it is shipped from the mill, and we recommend it as especially adapted to log loading and all other purposes where the highest quality chain is required.

Size ..... inches	1/4	5/16	3/8
Breaking Test ..... lbs.	5800	7500	11000
Proof Test ..... "	2900	3750	5500
Safe Working Load ..... "	1900	2500	3600
Outside Length Links ..... inches	1 1/2	1 13/16	2 3/16
Outside Width Links ..... "	1	1 1/16	1 1/16
Weight per Foot ..... lbs.	5/8	1 1/10	1 1/3
Links ..... to lb.	14	12	11
Price ..... per lb.	....	....	....

For Chain and Anchor Shackles, see pages 620 and 621.

LOG, OR BINDING CHAIN

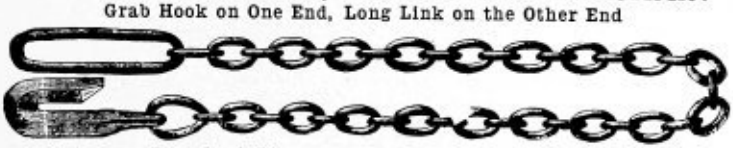
With Grab and Bunk Hooks

Also with Ring and Swivel

Size Chain, inch	1/4	5/16	3/8	7/16	1/2	5/8
12 foot.....each	$.....	.....	.....	.....	.....	.....
14 " ..... "	.....	.....	.....	.....	.....	.....
16 " ..... "	.....	.....	.....	.....	.....	.....

RAILROAD SWITCH, OR WRECKING CHAIN

Grab Hook on One End, Long Link on the Other End



Standard Sizes: 3/4, 7/8, 1, 1 1/8, 1 1/4 inch

Pittsburg Proof.....per lb., $..... BB.....per lb., $.....
BBB..... " ..... Dredge..... " .....

RAFTING CHAIN

With Ring on One End and Toggle on the Other

Usual Sizes: 5/8, 3/4, 7/8, 1 inch
Made any length desired. Per lb.....

CHAIN SLINGS

Made of any grade and size desired. We recommend our Dredge as the most desirable. Fitted with any style Hooks or Rings. The actual breaking strain is twice the Test.

The safe working load two-thirds the test.

See Table of Tests, pages 61 and 62.

GERMAN COIL CHAIN

BRIGHT WIRE
100 Foot Lengths

No.	6/0	5/0	4/0	3/0	2/0	1/0	1	2	3
Size Wire ... Inches	9/32	1/4	7/32	3/16	11/64	5/32	9/64	8/32	7/64
Per Hundred Feet	$18.00	15.50	13.00	11.00	10.00	8.80	7.80	7.20	6.80

GALVANIZED
This Chain to order

No.	3	2	1	0	00	000
Size ..... Inches	1/8	9/64	5/32	11/64	3/16	7/32
Per Hundred Feet	$4.75	5.00	5.50	6.25	7.00	8.00

For Derrick Chains with Grab Hooks, see page 173.

CONNECTING LINKS

DROP FORGE STEEL MISSING LINK

Size, inch.	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
Plain, per doz.	$1.00	$1.10	$1.20	$1.35	$1.50	$2.00	$3.35	$5.00	$7.00	$16.00	$21.50
Galv., per doz.	1.35	1.45	1.60	1.80	2.10	3.00	4.50	6.50	9.00	19.00	25.00
U.S.Govt. Test, lbs.	5,580	8,300	11,200	13,980	15,900	23,900	34,100	37,100	52,600	....	....

ACME DROP FORGED CONNECTING LINKS

Size, inches.....	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1
Plain, per doz..	$1.00	$1.10	$1.20	$1.30	$1.40	$1.75	$3.75	$5.00

STEEL COLD SHUTS

Size, inches.....	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1
Per 100.....	$3.20	$4.20	$5.00	$6.00	$9.00	$13.20	$26.00	$42.00	$64.00

BRIGHT LINKS

Size, inches	5/16 x 1 1/2	3/8 x 1 5/8	7/16 x 1 3/4	1/2 x 2	5/8 x 2 1/2
Per gross.....	$2.60	$3.80	$6.00	$9.00	$17.00

5/16-inch	Steel	Bunk	Hooks	or	Grab	Hooks,	per	doz.....	$2.00
3/8	"	"	"	"	"	"	"	"	"	.....	2.75
7/16	"	"	"	"	"	"	"	"	"	.....	3.50
1/2	"	"	"	"	"	"	"	"	"	.....	4.50
5/8	"	"	"	"	"	"	"	"	"	.....	7.25
3/4	"	"	"	"	"	"	"	"	"	.....	10.00

Steel Bunk Hook

Steel Grab Hook

SWIVELS

MALLEABLE

Chain, Heavy Pattern

Length, inches....	3	3 3/4	4 3/4	5	5 3/4
Size eye, "	3/8	1/2	5/8	3/4	7/8
Per lb.....					

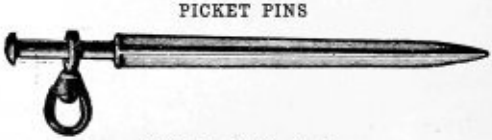
Chain, Light Pattern

Length, inches.....	2 3/8	2 1/2	2 7/8
Size eye, "	1/4	5/16	3/8
Per lb.			

Lariat

Length, inches.....	3	3 1/8
Size eye, "	5/8	3/4
Per lb.....		

PICKET PINS



With Lariat Swivel

13 inches long, japanned, per dozen.....	$1.20
21 " " " " "	1.80

TABLE OF ANCHORS REQUIRED FOR SAILING VESSELS

ACCORDING TO THEIR TONNAGE; ALSO NUMBER OF ANCHORS AND SIZE OF CABLE

From Rules of the American Shipmasters' Association.

(Approved by the Secretary of the U. S. Navy.)

Tonnage	Number			Weight				Fathoms of Cable	Size of Cable
	Bower	Stream	Kedge	Bower	Stream	Kedge	Second Kedge		
75	2	1	1	600	170	110	...	90	13/16
100	2	1	1	700	200	110	...	105	7/8
125	2	1	1	800	225	110	...	105	15/16
150	2	1	1	900	280	140	...	120	1
175	2	1	1	1,000	330	170	...	120	1 1/16
200	2	1	1	1,100	400	200	...	120	1 1/8
250	2	1	1	1,300	450	225	112	135	1 3/16
300	2	1	1	1,450	500	250	125	135	1 1/4
350	2	1	1	1,625	560	280	140	150	1 5/16
400	2	1	1	1,850	600	300	155	150	1 5/16
450	2	1	1	1,900	675	340	170	165	1 3/8
500	2	1	1	2,125	775	400	195	165	1 7/16
600	3	1	1	2,450	900	450	225	180	1 1/2
700	3	1	1	2,800	1,000	500	250	180	1 9/16
800	3	1	1	3,125	1,125	615	280	180	1 5/8
900	3	1	1	3,350	1,225	650	310	180	1 11/16
1,000	3	1	1	3,575	1,250	675	335	180	1 3/4
1,200	3	1	1	3 800	1,450	725	360	180	1 7/8
1,400	3	1	1	4,000	1,550	780	395	180	1 15/16
1,600	3	1	1	4,250	1,600	840	420	180	2
1,800	3	1	1	4,500	1,800	900	450	180	2
2,000	3	1	1	4,700	1,900	950	500	180	2 1/16
2,500	3	1	1	5,000	2,100	1120	560	180	2 1/8
3,000	3	1	1	5,400	2,350	1230	615	180	2 3/16
3,500	3	1	1	5,800	2,600	1300	650	180	2 1/4

TABLE OF ANCHORS REQUIRED FOR SAILING YACHTS

ACCORDING TO THEIR TONNAGE; ALSO NUMBER OF ANCHORS AND SIZE OF CABLE

From Lloyd's Register of Shipping.

Tonnage	Number			Weight			Fathoms of Cable	Size of Cable
	Bower	Stream	Kedge	Bower	Stream	Kedge		
3 to 5	1	1	..	40	20	...	30	5/16
5 to 7	1	1	..	65	32	...	45	3/8
7 to 10	1	1	..	84	40	...	60	3/8
10 to 13	1	1	..	100	45	...	60	7/16
13 to 19	1	1	..	112	70	...	60	7/16
19 to 26	1	1	..	137	80	...	60	1/2
26 to 34	1	1	..	168	90	...	75	9/16
34 to 43	1	1	1	196	168	65	90	9/16
43 to 56	1	1	1	252	224	84	105	5/8
56 to 79	1	1	1	310	277	100	105	11/16
79 to 100	1	1	1	361	336	100	120	11/16

For Anchors, see pages 632 and 633.
For Chain, see pages 61 and 62.

TABLE OF ANCHORS REQUIRED FOR STEAM VESSELS

ACCORDING TO THEIR TONNAGE; ALSO NUMBER OF ANCHORS AND SIZE OF CABLE

From Rules of the American Shipmasters' Association

(Approved by the Secretary of the U. S. Navy)

Tonnage	Number			Weight				Fathoms of Cable	Size of Cable
	Bower	Stream	Kedge	Bower	Stream	Kedge	Second Kedge		
100	2	1	..	392	112	....	...	105	11/16
150	2	1	..	504	200	....	...	120	13/16
200	2	1	..	672	225	....	...	120	7/8
250	2	1	..	840	280	....	...	120	15/16
300	2	1	..	1,008	300	....	...	120	1
350	2	1	..	1,176	336	....	...	120	1 1/16
400	2	1	1	1,344	530	250	...	135	1 1/8
450	2	1	2	1,512	560	280	...	135	1 3/16
500	2	1	2	1,680	675	335	...	150	1 1/4
600	2	1	2	1,848	730	360	...	150	1 5/16
700	2	1	2	2,016	790	390	...	165	1 3/8
800	2	1	2	2,184	900	450	225	165	1 7/16
900	2	1	2	2,380	1,000	500	250	180	1 1/2
1,000	2	1	2	2,600	1,120	560	280	180	1 9/16
1,200	2	1	2	2,850	1,175	580	310	180	1 5/8
1,400	2	1	2	3,100	1,230	615	310	180	1 11/16
1,600	2	1	2	3,350	1,350	675	335	180	1 3/4
1,800	2	1	2	3,600	1,450	730	360	180	1 13/16
2,000	3	1	2	3,800	1,500	760	360	180	1 7/8
2,300	3	1	2	4,100	1,550	785	390	180	1 15/16
2,600	3	1	2	4,250	1,625	815	390	270	2
3,000	3	1	2	4,400	1,680	850	420	270	2 1/16
3,500	3	1	2	4,600	1,800	900	475	270	2 1/8
4,000	4	1	2	4,800	1,960	950	500	270	2 3/16
4,500	4	1	2	5,000	2,130	1,050	530	270	2 1/4
5,000	4	1	2	5,200	2,250	1,100	560	270	2 5/16
5,500	4	1	2	5,400	2,400	1,170	585	300	2 3/8
6,000	4	1	2	5,600	2,520	1,250	625	300	2 7/16
6,500	4	1	2	5,800	2,650	1,320	660	300	2 1/2
7,000	4	1	2	6,000	2,800	1,400	700	300	2 9/16
8,000	4	1	2	6,300	3,000	1,500	750	330	2 5/8
9,000	4	1	2	6,650	3,250	1,620	800	330	2 11/16
10,000	4	1	2	7,000	3,500	1,750	870	360	2 3/4

TABLE OF ANCHORS REQUIRED FOR STEAM YACHTS

ACCORDING TO THEIR TONNAGE; ALSO NUMBER OF ANCHORS AND SIZE OF CABLE

From Lloyd's Register of Shipping

Tonnage	Number			Weight			Fathoms of Cable	Size of Cable
	Bower	Stream	Kedge	Bower	Stream	Kedge		
10 to 15	1	1	..	70	40	...	60	3/8
15 " 20	1	1	..	84	70	...	60	3/8
20 " 25	1	1	..	112	80	...	60	7/16
25 " 30	1	1	..	140	90	...	75	1/2
30 " 40	1	1	1	196	140	60	90	9/16
40 " 50	1	1	1	224	196	90	105	5/8
50 " 60	1	1	1	280	252	100	105	5/8
60 " 75	1	1	1	336	304	110	105	11/16
75 " 90	1	1	1	392	358	120	120	11/16
90 " 100	1	1	1	448	414	130	120	3/4

For Chain, see pages 61 and 62.
For Anchors, see pages 632 and 633.

STANDARD WOOD SHELL IRON STRAPPED BLOCKS

WITH HARCOURT'S PATENT STRAPS, IRON SHEAVES, AND LOOSE HOOKS

Single, with Becket

Double, with Becket

Triple, with Becket

IN ORDERING SPECIFY SIZE OF SHELL AND STATE IF BECKET IS WANTED

Dimensions				With Common Bushed Iron Sheaves, Each			With Patent Bushed Iron Sheaves, Each		
Size Sheave, inches	Mortise inches	For Dia. Rope, in.	Size Shell inches	Single	Double	Triple	Single	Double	Triple
1¾x ½x⅜	9/16	3/8	3	$0.70	$1.30	$1.75	$1.10	$2.00	$2.90
2 x ½x⅜	9/16	3/8	3½	.75	1.45	2.00	1.15	2.20	3.15
2¼x ⅝x⅜	11/16	½	4	.85	1.60	2.15	1.20	2.25	3.25
3 x ¾x⅜	⅞	⅝	5	.90	1.75	2.25	1.25	2.35	3.50
3½x1 x½	1	¾	6	1.10	2.00	2.90	1.50	2.85	4.40
4¼x1 x½	1⅛	⅞	7	1.30	2.40	3.50	1.70	3.35	5.00
4¾x1⅛x⅝	1¼	1	8	1.65	2.85	4.25	2.25	4.15	6.00
5½x1⅛x⅝	1¼	1	9	1.85	3.40	4.75	2.50	4.70	7.25
6¼x1¼x⅝	1⅜	1⅛	10	2.75	4.50	6.25	3.50	6.00	8.50
8 x1⅜x¾	1½	1¼	12	4.45	7.50	10.65	5.30	9.20	13.20
9½x1⅝x⅞	1¾	1⅜	14	7.00	10.50	15.00	8.15	12.80	18.45
10 x1⅝x⅞	1¾	1½	15	8.00	13.00	18.00	9.25	15.50	21.75
11 x1¾x⅞	1⅞	1⅝	16	10.00	15.00	22.00	11.50	18.00	26.50

Dimensions				With Self-Lubricating, Bushed Sheaves		
Size Sheave, inches	Mortise, inches	For Diam. Rope inches	Size Shell inches	Single	Double	Triple
2¼x ⅝x⅜	11/16	½	4	$1.50	$2.90	$4.15
3 x ¾x⅜	⅞	⅝	5	1.75	3.35	4.75
3½x1 x½	1⅛	¾	6	2.20	4.00	5.80
4¼x1 x½	1⅛	⅞	7	2.50	4.50	6.70
4¾x1⅛x⅝	1¼	1	8	3.25	5.70	8.50
5½x1⅛x⅝	1¼	1	9	3.70	6.75	10.00
6¼x1¼x⅝	1⅜	1⅛	10	4.75	8.50	12.50
8 x1⅜x¾	1½	1¼	12	6.75	12.50	18.50
9½x1⅝x⅞	1¾	1⅜	14	9.75	17.00	25.00
10 x1⅝x⅞	1⅞	1½	15	11.00	19.50	28.50

To make list of Fourfold, add price of Single to Triple.
For Special Fittings, see page 69.

BECKETS

We furnish Beckets in all single, one-half double, and one-third of the triple blocks, without charge. If a greater proportion are wanted, add for each additional Becket net extra as follows:

Size of Block, inches... 3 to 5	6	7	8	9	10	12	14	15	16
Net extra, each block ..$.05	.06	.07	.08	.09	.10	.12	.14	.15	.16

For Sheaves for these Blocks, see page 94.

THICK MORTISE WOOD SHELL IRON STRAPPED BLOCKS

With Harcourt's Patent Heavy Straps, Extra Heavy Hooks, Double Cross-bolted Iron Sheaves
Made Especially for Heavy Work

Single, with Becket

Double, with Becket

Triple, no Becket

In Ordering Specify Size of Shell and State if Becket is Wanted

Dimensions			With Common Bushed Iron Sheaves Each			With Patent Roller Bushed Iron Sheaves Each		
Size Sheave inches	For Diam. Rope, In.	Size Shell inches	Single	Double	Triple	Single	Double	Triple
4¼x1⅛x ½	1	7	$2.25	$4.00	$5.50	$3.00	$5.50	$7.75
4¾x1⅜x ⅝	1⅛	8	2.75	4.50	6.30	3.50	6.00	8.55
5½x1⅜x ⅝	1⅛	9	3.15	5.25	7.25	4.00	6.95	9.80
6¼x1½x ¾	1¼	10	4.00	6.50	8.50	5.25	9.00	12.25
8 x1⅝x ¾	1½	12	5.25	8.50	12.50	6.50	11.00	16.25
9½x1⅞x ⅞	1¾	14	8.00	13.00	17.00	9.75	16.50	22.25
11 x2¼x1	2	16	11.50	18.00	28.00	14.00	23.00	35.50

Dimensions			With Self-Lubricating Bushed Sheaves		
Size Sheave inches	For Diam. Rope, inches	Size Shell inches	Single	Double	Triple
4¾x1⅜x ⅝	1⅛	8	$5.00	$9.00	$13.00
5½x1⅜x ⅝	1⅛	9	5.75	10.50	15.00
6¼x1½x ¾	1¼	10	7.25	13.50	19.00
8 x1⅝x ¾	1½	12	9.25	17.00	25.00
9½x1⅞x ⅞	1¾	14	13.00	23.50	33.00
11 x2¼x1	2	16	18.00	32.00	48.00

To make list of Fourfold, add price of Single to Triple.
We can furnish these Blocks with Shackles. For Sheaves for these Blocks, see page 94.
For Special Fittings, see page 69.

EXTRA HEAVY WOOD SHELL, EXTRA THICK MORTISE IRON STRAPPED BLOCKS

Lashing Shackle and Becket

WITH LASHING SHACKLES—CROSS BOLTED

The Samson Brand Blocks are made thoroughout in the best possible manner. Every detail in their manufacture, from the selection of the materials to the workmanship and finish, has been given the most careful attention and we confidently offer them as the strongest and most reliable blocks made.

In Ordering Specify Size of Shell and State if Becket is Wanted

Lashing Shackle, no Becket

Dimensions				Common Iron Bushed Sheaves			
Size Sheave inches	Mortise inches	For Diameter Rope inches	Size Shell inches	Single	Double	Triple	Fourfold
12x2 5/8x1 1/8	2 1/2	2 1/4	18	$15.00	$29.00	$42.00	$57.00
14x2 7/8x1 1/4	3	2 1/2	20	21.00	37.00	54.00	75.00
15x3 3/8x1 1/2	3 1/2	3	22	26.00	48.00	70.00	96.00
16x3 7/8x1 1/2	4	3 1/2	24	32.00	56.00	84.00	116.00

Dimensions				Self-Lubricating Bushed Iron Sheaves			
Size Sheave inches	Mortise inches	For Diameter Rope inches	Size Shell inches	Single	Double	Triple	Fourfold
12x2 5/8x1 1/8	2 1/2	2 1/4	18	$23.00	$44.00	$63.00	$86.00
14x2 7/8x1 1/2	3	2 1/2	20	32.00	54.00	77.00	109.00
15x3 3/8x1 1/4	3 1/2	3	22	38.00	76.00	100.00	138.00
16x3 7/8x1 1/2	4	3 1/2	24	46.00	85.00	125.00	171.00

For Sheaves for these Blocks, see page 94.

EXTRAS FOR SPECIAL FITTINGS ON TACKLE BLOCKS

Fourfold Blocks. To make list, add price of Single to Triple.
Galvanized Straps. Add 10 per cent of list to net price of Block.
Wide Mortise. Add 10 per cent to list for every 1/4 inch wider than list.
Stiff Swivel Hooks. Use regular list; subject to less discount.
Match or Sister Hooks. Use regular list; subject to less discount.

Size, inches,	5	6	7	8	9	10	12
Swivel Jaws. Add to list,	$1.00	1.25	1.50	1.75	2.00	2.25	2.50

Loose Swivel Hooks. Add to list as follows:

Single Block	5	6	7	8	9	10	12	13	14	15	16
Double "	..	5	6	7	8	9	10	12	13	14	15
Triple "	..	..	5	6	7	8	9	10	12	13	14
Price	$0.50	.50	.50	.60	.75	.90	1.20	1.75	2.50	3.00	3.50

IRON STRAPPED WOOD SHELL SNATCH BLOCKS

WITH BOTH INSIDE AND OUTSIDE IRON STRAPS

6 to 16 inch

18 to 26 inch

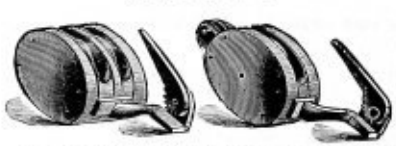
In Ordering Specify Size of Shell

Dimensions			Common Iron Bushed Sheaves Each	Patent Roller Bushed Sheaves Each	Phosphor Bronze or Metaline Sheaves Bushed Each
Size Sheave inches	For Diam. Rope inches	Size Shell inches			
3 x1 1/8 x 1/2	7/8	6	$4.00	$4.65	$5.25
3 1/2 x1 1/4 x 1/2	7/8	7	4.75	5.50	6.00
4 1/2 x1 3/8 x 5/8	1	8	5.75	6.60	7.25
5 x1 3/8 x 5/8	1 1/8	9	6.75	7.75	8.50
5 3/4 x1 7/8 x 3/4	1 1/4	10	8.50	10.00	11.00
6 3/4 x2 1/8 x 3/4	1 1/2	12	10.00	11.50	13.00
8 x2 1/4 x 7/8	1 3/4	14	13.00	15.00	16.50
9 x2 5/8 x1	2	16	17.00	20.00	22.00
10 x3 x1	2 1/4	18	25.00	28.50	31.00
11 x3 1/2 x1 1/4	2 1/2	20	38.00	43.00	46.00
11 3/4 x4 1/4 x1 1/2	3	22	55.00	63.00	68.00
12 1/2 x4 1/2 x1 1/2	3 1/2	24	70.00	78.00	86.00
14 x4 3/4 x1 3/4	4	26	90.00		110.00

TELEGRAPH BLOCKS

WOOD SHELL IRON STRAPPED

With Eccentric



IN ORDERING SPECIFY SIZE OF SHELL

Size Shell inches	Common Bushed		Roller Bushed	
	Single	Double	Single	Double
3 1/2	$1.50	$2.00	$1.70	$2.50

For Sheaves for these Blocks, see page 94.

NEW STYLE CARGO HOISTING BLOCK

GALVANIZED SHELL AND SHEAVE

WOODEN CHEEK SHEAVES

These Blocks have Galvanized Malleable Iron Frame, Wrought Iron Hook and Strap, are fitted with New Style Sheave. They are circular in form, enabling us to use a Sheave nearly same size as the Block. The edges of frame are rounded to protect the rope.

The Protecting Cheeks prevent the edges of the score of Sheave from coming in contact with the sides of the blocks, thereby keeping score of Sheave perfect for the rope.

In ordering specify size of Shell.

With Phosphor Bronze, Self-Lubricating Bushed Sheaves

Size Sheave inches	For Diameter Rope inches	Size Shell inches	Block Each	Sheave Each
4¼x1 x ½	¾	5½ inches.	$4.00	$1.75
5 x1⅛x ⅝	⅞	6½ "	5.00	2.15
5½x1⅛x ⅝	1	7½ "	6.00	2.30
6½x1⅜x ¾	1⅛	8½ "	8.00	3.00
7½x1½x ¾	1¼	10 "	10.50	3.75
9 x1⅝x ¾	1¼	11½ "	13.00	4.00
10 x1¾x ⅞	1½	12½ "	16.00	4.90
11½x1⅞x ⅞	1½	14 "	20.00	6.25
13½x2 x1	1¾	16½ "	26.00	8.00

For Hartz Steel Cargo Hoists, See Page 81.

WROUGHT IRON GIN BLOCKS

IN ORDERING SPECIFY SIZE OF SHEAVE

Diam. Sheave inches	Diam. Rope inches	Block Each	Sheave Each	Diam. Sheave inches	Diam. Rope inches	Block Each	Sheave Each
6	1	$3.15	$0.90	12	1	$5.80	$2.50
7	1	3.50	1.35	14	1¼	6.30	2.70
8	1	3.85	1.60	16	1¼	8.40	3.80
9	1	4.20	1.70	18	1½	9.80	4.30
10	1	4.55	1.80	20	1½	11.90	5.65
11	1	5.25	2.25	22	1½	13.30	6.75

This Cut Represents the Style of No. 2.

ANTI-FRICTION WELL WHEELS

PATENT ROLLER BUSHED, FOR LIGHT HOISTING

Diameter of wheel 12 inches; width of score, 1¼ inches.

		Price Each	Sheave Only
No. 1.	Roller bushed	$1.90	$1.25
No. 2.	" " heavy, with wrought iron strap	2.75	1.40

HARTZ STEEL BLOCKS

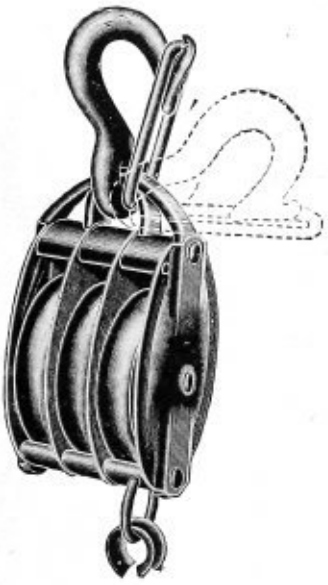


TABLE OF STRENGTH

This table gives the breaking strain of Hooks and Shackles, as tested by the United States Government, also of Manila Rope.

These tests are made under the most favorable conditions, we advise as a safe factor for working Load.

One-third to one-half the Strength on Blocks.

One-third the Strength of Pure Manila Rope.

One-half the Strength of Old Colony Hoisting Rope.

STRENGTH OF BLOCKS. ORDINARY

Dimensions		Two Single Blocks		Two Double Blocks		Two Triple Blocks	
Size of Block Shell inches	Size of Rope Diam. inches	Breaking Strain of Hooks pounds	Breaking Strain of New Rope pounds	Breaking Strain of Hooks pounds	Breaking Strain of New Rope pounds	Breaking Strain of Hooks pounds	Breaking Strain of New Rope pounds
4	½	2,218	3,600	2,985	7,200	3,987	10,800
5	⅝	2,985	6,400	3,987	12,800	5,410	18,200
6	¾	3,987	8,100	5,410	16,200	6,360	24,300
7	⅞	5,410	12,100	6,360	24,200	9,356	36,300
8	1	6,360	14,400	9,356	28,800	13,720	43,200
9	1⅛	13,720	19,600	16,030	39,200	18,722	58,800
10	1¼	16,030	22,500	18,722	45,000	20,375	67,500
12	1⅜	18,722	28,900	20,375	57,800	28,300	86,700
14	1½	19,050	32,400	20,375	64,800	28,300	97,200

WIDE MORTISE AND HEAVY TACKLE

Dimensio s		Two Single Blocks		Two Double Blocks		Two Triple Blocks	
Size of Block Shell	Size of Rope Diam.	Breaking Strain of Hooks	Breaking Strain of New Rope	Breaking Strain of Hooks	Breaking Strain of New Rope	Breaking Strain of Hooks	Breaking Strain of New Rope
14 in.	1¾ in.	28,300 lbs.	43,300 lbs.	35,680 lbs.	86,600 lbs.	35,680 lbs.	129,900 lbs.
16 "	2 "	35,680 "	48,400 "	72,100 "	96,800 "	72,100 "	145,200 "

EXTRA HEAVY WRECKING BLOCKS, WITH LASHING SHACKLES

Dimensions		Two Single Blocks		Two Double Blocks		Two Triple Blocks	
Size of Block Shell	Size of Rope Diam.	Breaking Strain of Shackles	Breaking Strain of New Rope	Breaking Strain of Shackles	Breaking Strain of New Rope	Breaking Strain of Shackles	Breaking Strain of New Rope
17 in.	2¼ in.	116,300 lbs.	67,600 lbs.	132,532 lbs.	135,200 lbs.	155,542 lbs.	202,800 lbs.
18 "	2½ "	132,522 "	78,400 "	155,542 "	156,800 "	172,400 "	235,200 "
20 "	3 "	155,542 "	115,600 "	172,400 "	231,200 "	235,620 "	346,800 "
22 "	3½ "	226,500 "	.....	270,000 "	.....	313,000 "	.....
24 "	4 "	276,000 "	.....	336,000 "	.....	425,000 "	.....

WHAT ONE MAN SHOULD HOIST WITH A PAIR OF BLOCKS, PULLING HAND OVER HAND

With a rope over a stationary sheave, one man will hoist nearly half his weight, averaging 75 pounds, barring friction. Friction reduces this force to about 60 pounds if the sheave be self-lubricating bronze or roller bushed, and to about 50 pounds if the sheave be common or iron bushed. Each sheave in the lower or movable Block multiplies this force by two, so that one man should hoist wth a pair of Blocks, as follows:

Single Iron Bushed.....100 lbs.
Double " .....200 "
Triple " .....300 "

Single S. L. Bronze or Roller Bushed.....120 lbs.
Double " " " .....240 "
Triple " " " .....360 "

We call your attention to the fact that it takes three men to hoist with a pair of single blocks the same load one man will hoist with a pair of triple blocks.

If you want the best rope money can buy, specify Old Colony Hoisting Rope.

HARTZ STEEL TACKLE BLOCKS

THE STRONGEST AND MOST CAREFULLY CONSTRUCTED BLOCKS ON EARTH

NO MORE BREAKING OR STRAIGHTENING OF HOOKS

They are manufactured under the immediate supervision of the Manufacturer, whose years of practical experience have made him the best known authority in the United States.

The day of wood has passed in Tackle Blocks as in many other manufactured articles. Steel, the strongest and lightest of all commercial metals, is to-day used in all possible manufactured articles. This was recognized and advantage taken of by the inventor and the result is shown not only in the Hartz Block as to its great strength in comparison with other blocks, but the general finish as well.

The careful rounding of the edges of the shells, to prevent the ropes from being chafed, is a feature in the Hartz Blocks which one can not afford to overlook.

The average buyer does not wish to economize on the price of Tackle Blocks at the expense of the rope.

Don't be tempted by cheap prices on weak blocks. To-day when the responsibility of accidents, so often causing loss of life, is settled upon the owners of defective property, much care should be taken in selecting only the best of everything. This is particularly true in the purchase of Tackle Blocks.

The Shells are wrought steel with edges nicely rounded out to prevent chafing of rope. The edges are also upset, thus adding greatly to the strength.

These shells will not break like iron or wood, should the block be dropped from a height.

Neither will they dent, except under most extraordinary circumstances.

They are the most durable shells ever put on tackle blocks.

The Straps, of best quality open hearth steel, run on the inside of the shells, and down to the beckets in all sizes larger than 6-inch blocks. In smaller sizes the straps run below the pin. There are middle straps in all double and triple Hartz Blocks.

The Pins used in the Hartz Blocks are steel.

The Hooks furnished are the patent safety link style, which add much to the value of the blocks. No extra charge is made for them. These hooks can not be had on any other than the Hartz Blocks. The greatest care is used as to quality of material and workmanship. They are all made of open hearth steel.

"HARTZ" STEEL TACKLE BLOCKS

With Safety Link Hook

Single, with Becket

Double, with Becket

Triple, with Becket

REGULAR MORTISE

IN ORDERING SPECIFY SIZE OF SHELL AND STATE IF BECKET IS WANTED

Size of Sheave	Diameter Rope	Length of Shell	Description	Plain Bushed		Steel Roller Bushed		Self-Lubricating Bushed	
				Blocks Each	Sheaves Each	Blocks Each	Sheaves Each	Blocks Each	Sheaves Each
2¼x 11/16x ⅜	½ in.	4 in.	Single	$0.85		$1.20		$1.50	
			Double	1.60	$0.13	2.25	$0.55	2.90	$0.90
			Triple	2.15		3.25		4.10	
2¾x ⅞x 7/16	⅝ in.	5 in.	Single	.90		1.25		1.65	
			Double	1.75	.15	2.35	.65	3.25	.95
			Triple	2.25		3.50		4.50	
3¼x1 x ½	¾ in.	6 in.	Single	1.10		1.50		1.95	
			Double	2.00	.25	2.85	.75	3.70	1.10
			Triple	2.90		4.40		5.45	
4¼x1⅜x 9/16	⅞ in.	7 in.	Single	1.30		1.70		2.25	
			Double	2.40	.33	3.35	.90	4.30	1.30
			Triple	3.50		5.00		6.35	
4¾x1¼x ⅝	1 in.	8 in.	Single	1.65		2.25		2.75	
			Double	2.85	.40	4.15	1.10	5.05	1.45
			Triple	4.25		6.00		7.55	
5½x1½x 11/16	1⅛ in.	9 in.	Single	1.85		2.50		3.10	
			Double	3.40	.50	4.70	1.30	5.90	1.65
			Triple	4.75		7.25		8.50	
6 x1⅝x¾	1¼ in.	10 in.	Single	2.75		3.50		4.15	
			Double	4.50	.65	6.00	1.60	7.30	1.95
			Triple	6.25		8.50		10.45	
7½x1¾x⅞	1⅜ in.	12 in.	Single	4.45		5.30		6.05	
			Double	7.50	.95	9.20	2.00	10.70	2.40
			Triple	10.65		13.20		15.45	
8½x1⅞x1	1½ in.	14 in.	Single	7.00		8.15		8.85	
			Double	10.50	1.20	12.80	2.50	14.20	2.85
			Triple	15.00		18.45		20.55	

All the above Blocks larger than 8 inch are virtually Wide Mortise Blocks.

All Steel Roller Bushed Sheaves in blocks 6 inch and less have five roller bushed Sheaves. Larger have six roller bushed.

"HARTZ" STEEL TACKLE BLOCKS

GALVANIZED

With Safety Link Hook

Single, with Becket

Double, with Becket

Triple, with Becket

REGULAR MORTISE

IN ORDERING, SPECIFY SIZE OF SHELL AND STATE IF BECKET IS WANTED

These Blocks are thoroughly galvanized in every part, perfectly rust-proof in every respect.

The only Perfect Rust-Proof Blocks

Size of Sheave	Diameter of Rope	Length of Shell	Description	Plain Bushed		Self-Lubricated Bushed	
				Blocks Each	Sheaves Each	Blocks Each	Sheaves Each
2¼ x 11/16 x ⅜	½ in.	4 in.	Single	$1.00		$1.80	
			Double	1.80	$0.15	3.40	$1.00
			Triple	2.70		5.05	
2¾ x ⅞ x 7/16	⅝ in.	5 in.	Single	1.10		2.05	
			Double	2.05	.20	3.90	1.05
			Triple	2.85		5.60	
3¼ x 1 x ½	¾ in.	6 in.	Single	1.35		2.45	
			Double	2.45	.30	4.55	1.25
			Triple	3.75		6.85	
4¼ x 1⅛ x 9/16	⅞ in.	7 in.	Single	1.75		2.95	
			Double	3.15	.45	5.50	1.50
			Triple	4.85		8.35	
4¾ x 1¼ x ⅝	1 in.	8 in.	Single	2.35		3.65	
			Double	3.85	.60	6.50	1.65
			Triple	5.75		9.85	
5½ x 1½ x 11/16	1⅛ in.	9 in.	Single	2.75		4.40	
			Double	4.75	.75	7.75	1.90
			Triple	6.75		11.20	
6 x 1⅝ x ¾	1¼ in.	10 in.	Single	3.95		5.65	
			Double	6.40	1.00	9.80	2.25
			Triple	9.00		14.30	
7½ x 1¾ x ⅞	1⅜ in.	12 in	Single	6.20		8.05	
			Double	10.00	1.30	13.90	2.80
			Triple	15.00		20.90	
8½ x 1⅞ x 1	1½ in.	14 in.	Single	9.50		11.65	
			Double	14.00	1.75	18.40	3.60
			Triple	21.00		27.60	

All the straps run on the inside of the shell.

All the above Blocks, larger than 8-inch, are virtually Wide Mortise Blocks.

Unless otherwise ordered, we furnish all of the single, half of the double, and one-third of the triple blocks with beckets.

"HARTZ" STEEL TACKLE BLOCKS

THICK MORTISE PURCHASE BLOCKS

With Safety Link Hook, Ring, or Shackle

* Single
With Becket

* Double
With Becket

* Triple
With Becket

The Strongest Blocks Manufactured

The Safety Link Hooks are particularly useful on these blocks for heavy work, and answer all requirements, but all Thick or Wide Mortise Blocks are made with Rings or Shackles, instead of hooks, if so desired.

All Sheaves for same size of Blocks are interchangeable.

All Straps run inside of Shell. All Pins are steel and are fastened securely by spring cotters.

In ordering, specify size of shell and state if becket is wanted.

*In ordering, specify whether Safety Link Hook, Ring or Shackle is wanted.

THICK MORTISE, WITH PLAIN BUSHED SHEAVES

Dimensions			Price			
Size Sheave, inches	For Diameter Rope, inches	Size Shell inches	Single	Double	Triple	Sheave Each
7½ x 2 x ⅞	1⅝	12	$7.00	$10.50	$15.00	$1.15
8½ x 2⅛ x 1	1¾	14	9.00	15.00	20.00	1.40
10 x 2⅜ x 1¼	2	16	13.00	21.00	32.00	2.00

THICK MORTISE, WITH SELF-LUBRICATING GRAPHITE BRONZE BUSHED SHEAVES

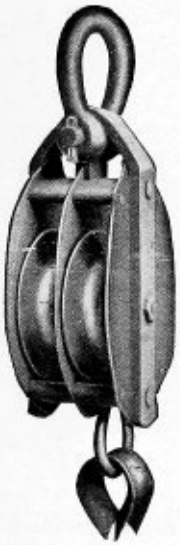
Dimensions			Price			
Size Sheave, inches	For Diameter Rope, inches	Size Shell inches	Single	Double	Triple	Sheave Each
7½ x 2⅞ x ⅞	1⅝	12	$8.75	$14.50	$20.00	$2.75
8½ x 2⅛ x 1	1¾	14	10.75	18.50	25.50	3.00
10 x 2⅜ x 1¼	2	16	15.00	25.00	38.00	3.75

These are the strongest and lightest Thick Mortise Blocks in the world.

"HARTZ" STEEL TACKLE BLOCKS

WITH LASHING SHACKLE AND OUTSIDE STEEL STRAPS

In ordering, specify Size of Shell and state if Becket is wanted.



Double, with Becket

Triple, with Becket

Extra Heavy Thick Mortise, with Plain Bushed Sheaves

Dimensions			Price List			
Size Sheave, inches	For Diameter Rope, inches	Size Shell inches	Single	Double	Triple	Sheave Only
10 x 2⅝ x 1¼	2¼	17	$40.00	$51.00	$66.00	$2.50
11 x 3¼ x 1½	2½	18	44.00	66.00	80.00	3.00
13 x 4 x 1½	3	20	52.00	70.00	95.00	5.75

Extra Heavy Thick Mortise, with Self-Lubricating Graphite Bronze Bushed Sheaves

Dimensions			Price List			
Size Sheave, inches	For Diameter Rope, inches	Size Shell inches	Single	Double	Triple	Sheave Only
10 x 2⅝ x 1¼	2¼	17	$43.00	$61.00	$76.00	$5.25
11 x 3¼ x 1½	2½	18	48.00	72.00	90.00	6.00
13 x 4 x 1½	3	20	58.00	83.00	115.00	8.50

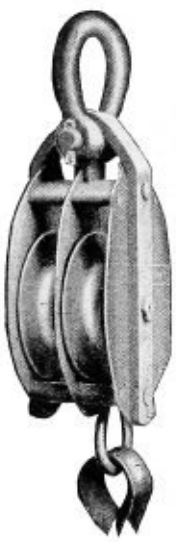
These Blocks are made with Outside Steel Straps.

The careful rounding of the edges of the shell, to prevent the ropes from being chafed, is a feature in the "Hartz" Blocks which one cannot afford to overlook. The average buyer does not wish to economize on the price of Tackle Blocks at the expense of the rope.

The "Hartz" Steel Tackle Blocks are carefully constructed. Protection to the ropes, strength at every point, light weight and uniform reliability are a few of their merits.

"HARTZ" STEEL "TRAIN LIFTERS"

WITH LASHING SHACKLE AND OUTSIDE STEEL TRAPS



Double, with Becket

Triple, with Becket

Fourfold, without Becket

In ordering, specify Size of Shell and state if Becket is wanted.

WITH PLAIN BUSHED SHEAVES

Dimensions			Price List				
Size Sheave inches	For Diam. Rope, inches	Size Shell inches	Single	Double	Triple	Fourfold	Sheave Only
15 x 4½ x 1½	3½	22	$62.00	$90.00	$110.00	$172.00	$7.00
17 x 5 x 1¾	4	24	75.00	110.00	140.00	215.00	10.00

WITH SELF-LUBRICATING GRAPHITE BRONZE BUSHED SHEAVES

Dimensions			Price List				
Size Sheave inches	For Diam. Rope, inches	Size Shell inches	Single	Double	Triple	Fourfold	Sheave Only
15 x 4½ x 1½	3½	22	$70.00	$106.00	$134.00	$204.00	$14.00
17 x 5 x 1¾	4	24	85.00	130.00	170.00	255.00	19.00

These Blocks are made with Outside Steel Straps. The edges are rounded and rolled to prevent the chafing of the rope.

Don't be tempted by cheap prices on weak blocks. In these times when the responsibility of accidents, so often causing loss of life, is settled upon the owners of defective property, much care should be taken in selecting only the best of everything. This is particularly true in the purchase of Tackle Blocks.

The "Hartz" Steel Tackle Blocks are made with this object in view, and for reliability are superior to all others. They are the strongest, best made tackle blocks on the market, and should always be recommended for use where life or property may be jeopardized.

"HARTZ" STEEL TACKLE BLOCKS

With Stiff Swivel Hooks

Single, with Becket

Double, with Becket

Triple, with Becket

These Blocks are made with the same score as Wide Mortise Blocks, taking the same sizes of Rope. In ordering, specify Size of Shell and state if becket is wanted.

Length of Shell	Size of Sheave	Diameter of Rope	Description	Plain Bushed Sheaves		Self-Lubricating Bronze Bushed Sheaves	
				Blocks, Each	Sheaves, Each	Blocks, Each	Sheaves, Each
4 in.	2¼x 11/16x ⅜	½ in.	Single	$1.35		$2.00	
			Double	2.25	$0.13	3.55	$0.90
			Triple	3.25		5.20	
5 in.	2¾x ⅞x7/16	⅝ in.	Single	1.50		2.25	
			Double	2.50	.15	4.00	.95
			Triple	4.00		5.50	
6 in.	3¼x1 x ½	¾ in.	Single	1.75		2.60	
			Double	2.85	.25	4.55	1.10
			Triple	4.75		6.80	
7 in.	4¼x1⅛x 9/16	⅞ in.	Single	2.00		2.85	
			Double	3.25	.33	5.00	1.30
			Triple	5.50		7.50	
8 in.	4¾x1¼x ⅞	1 in.	Single	2.75		3.80	
			Double	4.75	.40	6.85	1.45
			Triple	7.00		10.00	
9 in.	5½x1½x 11/16	1⅛ in.	Single	3.50		4.65	
			Double	6.00	.50	8.30	1.65
			Triple	9.50		12.50	
10 in.	6 x1⅝x ¾	1¼ in.	Single	4.50		5.80	
			Double	7.50	.65	10.00	2.30
			Triple	14.00		15.00	
12 in.	7½x2 x ⅞	1½ in.	Single	6.50		8.00	
			Double	11.00	1.15	14.25	2.75
			Triple	18.00		21.00	
14 in.	8½x2⅛x1	1¾ in.	Single	9.00		11.00	
			Double	15.00	1.40	18.50	3.00
			Triple	22.00		26.00	
16 in.	10 x2⅜x1¼	2 in.	Single	13.00		15.00	
			Double	22.00	2.00	26.00	3.75
			Triple	32.00		38.00	

THE SHEAVES ARE INTERCHANGEABLE

All Straps run on inside of Shell. Pins fastened by Spring Cotters.
All these Stiff Swivel Blocks have extra heavy hooks.

"HARTZ" AUTOMATIC WROUGHT IRON AND STEEL LOCK SNATCH BLOCKS

In ordering, specify Size of Block.

The Heavy Strap goes completely around the whole Block and inside the Shell, rendering the Block practically unbreakable.

Dimensions			With Plain Bushed Sheaves		With Self-Lubricating Graphite Bronze Bushed Sheaves	
Size Sheave inches	For Diameter Rope inches	Size Block inches	Block Each	Sheave Each	Block Each	Sheave Each
3½x1¼x ½	¾ and ⅞	7	$4.75	$0.28	$5.50	$1.25
4 x1½x ⅝	1 " 1⅛	8	5.75	.40	7.00	1.50
5½x1⅞x ⅞	1¼ " 1⅜	10	8.50	.70	10.00	2.00
7 x2 x1	1½ " 1⅝	12	10.00	1.10	11.50	2.90
8 x2¼x1⅛	1¾ " 1⅞	14	13.00	1.65	15.00	3.40
9 x2½x1¼	2 " 2¼	16	17.00	2.25	20.00	4.25

"HARTZ" AUTOMATIC WROUGHT IRON AND STEEL EXTRA HEAVY LOCK SNATCH BLOCKS

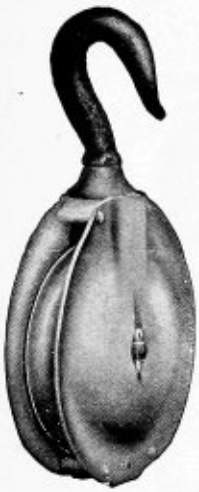
Dimensions			With Plain Bushed Sheaves		With Self-Lubricating Graphite Bronze Bushed Sheaves	
Size Sheave inches	For Diameter Rope inches	Size Block inches	Block Each	Sheave Each	Block Each	Sheave Each
11x3¼x1½	2½	18	$38.00	$3.00	$45.00	$6.00
13x4 x1½	3	20	55.00	5.75	62.00	8.50
15x4½x1½	3½	22	70.00	7.00	80.00	14.00
17x5 x1¾	4	24	90.00	10.00	100.00	19.00

These Blocks are for extra heavy work, and are made in the most careful manner possible, each part being tested and every Block warranted.

The strap passes entirely around the Block, forming a solid bearing, thereby equalizing the strain throughout and rendering the Block absolutely unbreakable.

The edges are all neatly rounded to protect the rope from chafing.

"HARTZ" STEEL CARGO HOISTING BLOCKS



GALVANIZED

With Self-Lubricating Graphite Bronze Bushed Sheaves

In ordering, specify Size of Shell.

Steel Shells, with edges beautifully rounded out and upset to twice the thickness of the steel, making a very stiff cheek piece. Straps run below the pin, inside the shell. The bridge, or connecting piece below the hook, is very smooth, and prevents chafing of the rope.

Self-Lubricating Bronze Bushings

Size of Shell	Size of Rope	Size of Sheave	Block, Each	Sheave with Bearing Plate, Each
7 in.	$\frac{7}{8}$ in.	5 x$1\frac{1}{8}$x$\frac{9}{16}$	$5.00	$2.15
8 in.	1 in.	6 x$1\frac{1}{4}$x$\frac{5}{8}$	6.00	2.65
$9\frac{1}{2}$ in.	$1\frac{1}{8}$ in.	7 x$1\frac{3}{8}$x$\frac{11}{16}$	8.00	3.20
12 in.	$1\frac{1}{4}$ in.	$8\frac{1}{2}$x$1\frac{5}{8}$x$\frac{3}{4}$	10.50	4.20
13 in.	$1\frac{1}{2}$ in.	$9\frac{1}{2}$x$1\frac{7}{8}$x$\frac{7}{8}$	13.00	5.10

For New Style Cargo Hoists, see page 71.

"HARTZ" STEEL DOCK BLOCKS

Shells and Sheaves Galvanized, Socket and Screw Japanned

With Self-Lubricating Bronze Bushed Sheaves
In Ordering, Specify Size of Shell

Dimensions			Each	
Size Sheave, inches	For Diameter Rope inches	Size Shell, inches	Block	Sheave with Bearing Plate
$8\frac{1}{2}$x$1\frac{5}{8}$x$\frac{3}{4}$	$1\frac{1}{4}$	12	$12.00	$4.20
$9\frac{1}{2}$x$1\frac{7}{8}$x$\frac{7}{8}$	$1\frac{1}{2}$	13	15.00	5.10

These Blocks have steel shells with the edges well turned out to prevent all chafing of the rope.

The edges are also upset to twice the thickness of the steel, making a very stiff cheek piece.

On each side of the sheave is riveted a steel plate, and corresponding plates are riveted on the inner faces of the shells. On each sheave plate is riveted a self-lubricating bearing plate, which holds the sheave squarely in the center, preventing all side play.

The straps run on the inside of the shell below the pin.

The steel pins are flattened on one end to prevent them turning in the shell, and have nut and head which lie flush with the sides, offering no obstructions.

"HARTZ" STEEL LOADING AND LUMBERMEN'S BLOCKS

Loading Block with Stiff Swivel Hook

Loading Block with Grab Hook Link and Swivel Eye

Lumbermen's Block, with Swivel Eye, Loose Hook

Description		Plain Bushed Sheaves				Self-Lubricating Bushed Sheaves			
Size Sheave Inches	Name of Block	Blocks with Rope Sheaves per dozen	Blocks with Chain Sheaves per dozen	Rope Sheave only, per doz.	Chain Sheave only, per doz.	Blocks with Rope Sheaves per dozen	Blocks with Chain Sheaves per dozen	Rope Sheave only, per doz.	Chain Sheave only, per doz.
5½x1⅝x5⅝	Loading Blocks with Stiff Swivel Hooks	$22.50	$24.30	$7.20	$9.00	$30.00	$33.00	$18.00	$21.00
5½x1⅝x5⅝	Loading Blocks, with Grab Hook, Link and Swivel Eye	30.00	31.80	7.20	9.00	37.50	40.50	18.00	21.00
5½x1⅝x5⅝	Lumbermen's Blocks, with Swivel Eye, loose Hook and Becket	30.00	31.80	7.20	9.00	37.50	40.50	18.00	21.00

Upper Ice Block with Swivel Hook

These Blocks are all made with heavy steel shells, wrought hooks 1⅛ inches in diameter, steel pins ⅝ inch diameter. Sheaves are extra heavy.

The edges are rolled out to prevent the chafing of rope or catching links of chain.

The ends of the pin lie flush with the sides, offering no obstructions when the blocks are dragged over rough surfaces.

"HARTZ" ICE BLOCKS

Both the upper and lower Blocks are made with roller guards. The sheaves are Self-Lubricating Bronze Bushed Sheaves, allowing them to be run at high speed without the use of any oil.

Dimensions		Each		
Size Sheave inches	For Dia. Rope inches	Upper Block Each	Lower Block Each	Sheave Only, Each
8x1⅝x⅝	1	$5.00	$5.75	$2.00
10x1⅞x¾	1⅛	6.00	6.75	3.00
12x2 x⅞	1¼	7.50	8.25	4.00

Lower Ice Block with Swivel Plates

"HARTZ" SELF-OILING STEEL HAY FORK BLOCKS

Steel shell, open hearth steel swivel ring, iron sheave (4¼ in. diam., 1½ in. wide), mortise 1¾ in., plenty of head room. Edges of shells are upset and turned out to prevent wear of rope. The chamber in sheave can be filled with axle grease, tallow, or oil, and then corked up. The lubricant feeds on the solid pin or axle, no matter in what position the Block is worked. It is the best self-oiling device in the market.

Blocks..... Per doz., $6.00

Sheaves..... " 3.60

Self-Oiling Hay Fork Block

THE SPECIAL STEEL TACKLE BLOCKS

Single
With Becket

Double
With Becket

Triple
Without Becket

They are lighter than Wood Blocks and equally strong. As there is no danger of shells splitting, they are more durable.

They are japanned and baked hard, giving them a beautiful finish.

Forged Steel Hooks, Straps, Pins and Shells.

Straps extend full length of shell, giving strength and rigidity to the blocks, and furnishing proper support for Beckets.

Shells have rounded edges to protect rope.

In ordering specify size of Shell and state if Becket is wanted.

Dimensions			Iron Bushed Blocks			Improved Roller Bushed Blocks		
Size Sheave inches	For Dia. Rope inches	Length Shell inches	Single Each	Double Each	Triple Each	Single Each	Double Each	Triple Each
1¾x ½x⅜	⅜	3	$0.70	$1.30	$1.75	$1.10	$2.00	$2.90
2¼x ⅝x⅜	½	4	.85	1.60	2.15	1.20	2.25	3.25
3 x ¾x⅜	⅝	5	.90	1.75	2.25	1.25	2.35	3.50
3½x1 x½	¾	6	1.10	2.00	2.90	1.50	2.85	4.40
4¼x1 x½	⅞	7	1.30	2.40	3.50	1.70	3.35	5.00
4¾x1⅛x⅝	1	8	1.65	2.85	4.25	2.25	4.15	6.00
6¼x1¼x⅝	1⅛	10	2.75	4.50	6.25	3.50	6.00	8.50

For general use where Loads are light we recommend these Blocks.

"HARTZ" WIRE ROPE GIN BLOCKS

Stiff Swivel Hooks, Soft Steel Skeleton, Roller Guards

FOR WIRE ROPE

In ordering specify size of Sheave and state if Becket is wanted.

Single with Becket

With Self-Lubricating Graphite Bronze Bushed Sheaves

Dimensions		Each			
Diameter Sheave inches	For Diam. Rope inches	Single	Double	Triple	Sheave only
10x1¾x1	½	$11.00	$18.00	$28.00	$4.00
12x1¾x1	⅝	12.50	20.00	31.00	4.75
14x2 x1⅛	¾	15.00	23.00	36.00	5.50
16x2 x1¼	⅞	18.00	27.00	46.00	6.75
18x2⅜x1¼	1	23.00	32.00	53.00	8.00
20x2½x1⅜	1⅛	28.00	38.00	65.00	9.50

These Blocks require no oil, are made of best grades of steel, with turned steel pins and roller guards, guaranteeing perfect protection to the rope.

We can furnish these Blocks with Loose Safety Link Hooks, same list prices.

Double with Becket

"HARTZ" STEEL DERRICK AND HOISTING BLOCKS

FOR WIRE ROPE

In ordering specify size of Shell and state if Becket is wanted.

Single with Becket and Guards

Note extra for Guards. If wanted, specify.

With Self-Lubricating Graphite Bronze Bushed Sheaves

Dimensions			Each				
Size Sheave inches	For Diam. Rope inches.	Size Shell inches	Single	Double	Triple	Sheave only	Guards per pair
6 x1¼x⅝	¼ and ⅜	9	$4.50	$7.50	$11.00	$1.75	$1.60
9½x1½x¾	⅜ " ½	12	6.50	12.00	18.00	3.00	1.60
10½x1⅝x⅞	½ " ⅝	13	8.00	15.00	22.00	3.75	1.60
12 x2 x1	⅝ " ¾	16	10.00	19.00	27.00	7.00	1.60
14 x2⅛x1	⅞ " 1	18	15.00	24.00	36.00	8.00	1.60

These Blocks furnished with or without Steel Safety Link Hook. When the block is used as a lower block in hoisting we send Guards (see list for extra cost), as they prevent the block from tipping over. All Blocks are drilled for the guards, so that they can be adjusted readily.

In ordering these Blocks, always specify Wire Rope Derrick Blocks, to avoid mistakes.

Can furnish with Stiff Swivel Hook at an advance in price.

Double with Becket

"HARTZ" STEEL SQUARE CHEEK BLOCKS

G. B. C. & CO. PATTERN

For Wire Rope

With Self-Lubricated Graphite Bushed Sheaves

Especially Adapted for Derricks

In Ordering Specify Size of Sheave and State if Becket is Wanted

SHELLS AND SHEAVES

Single

Double

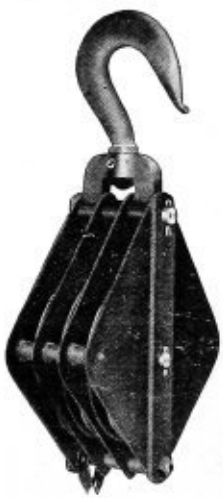
Dimensions		Blocks, Each			
Diam. Sheaves inches	For Rope Diam. inches	Single	Double	Triple	Sheave Only Each
10x1¾x1	½	$11.00	$17.50	$25.00	$4.00
12x1¾x1	⅝	12.50	20.00	30.50	4.75
14x2 x1⅛	¾	18.50	28.50	40.00	5.50
16x2 x1¼	⅞	26.25	38.00	51.50	6.75
18x2⅜x1¼	1	36.00	51.75	70.00	8.00

Triple

WITH DETACHABLE STIFF SWIVEL HOOKS

Single

Double



Triple

Dimensions		Blocks, Each			Sheaves Each
Diam. Sheaves inches	For Rope Diam. inches	Single	Double	Triple	
10x1¾x1	½	$20.00	$27.00	$39.25	$4.00
12x1¾x1	⅝	21.75	30.00	45.75	4.75
14x2 x1⅛	¾	33.00	44.50	59.25	5.50
16x2 x1¼	⅞	42.25	54.25	73.25	6.75
18x2⅜x1¼	1	56.50	73.00	98.50	8.00

"HARTZ" STEEL SQUARE CHEEK BLOCKS

G. B. C. & Co. PATTERN

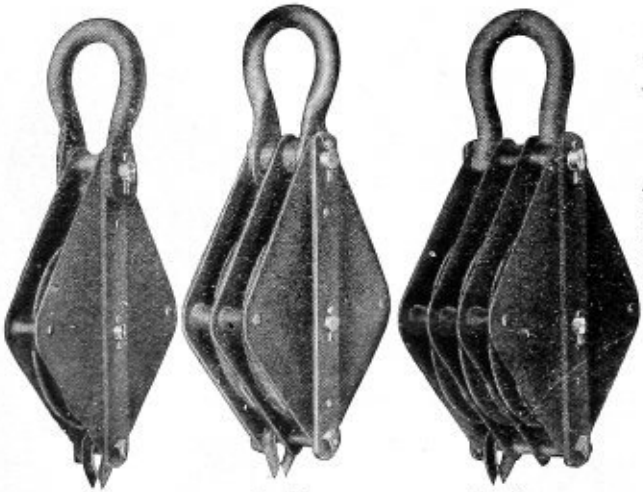
For Wire Rope

With Self-Lubricated Graphite Bushed Sheaves

Especially Adapted for Derricks

In ordering, specify Size Sheave and state if Becket is wanted

With Detachable Shackles



Single Double Triple

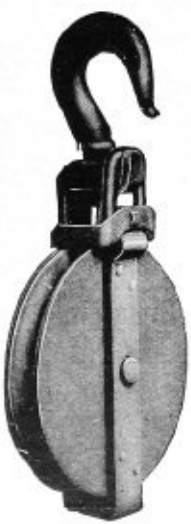
Dimensions		Blocks, Each			
Diam. Sheaves Inches	For Rope Diam. Inches	Single	Double	Triple	Sheave Each
10x1¾x1	1	$21.00	$28.00	$36.50	$4.00
12x1¾x1	⅞	22.50	30.50	42.00	4.75
14x2 x1⅛	¾	34.00	44.50	64.25	5.50
16x2 x1¼	⅞	50.50	63.00	78.50	6.75
18x2⅜x1¼	1	82.00	99.00	118.00	8.00

"HARTZ" STEEL SNATCH BLOCKS

With Stiff Swivel Hook

FOR WIRE ROPE

With Self-lubricating Graphite Bronze Bushed Sheaves



Dimensions		Blocks Each	Sheave Each
Diam. Sheave inches	For Diam. Rope inches		
8x1⅝x ¾	⅜	$15.00	$3.50
10x1¾x1	½	18.00	4.00
12x1¾x1	⅝	21.00	4.75
14x2 x1⅜	¾	24.00	5.50
16x2 x1¼	⅞	30.00	6.75
18x2⅜x1¼	1	40.00	8.00
20x2½x1⅜	1⅛	52.00	9.50
22x2⅝x1½	1¼	60.00	14.00

The rope is perfectly protected by the steel shell.

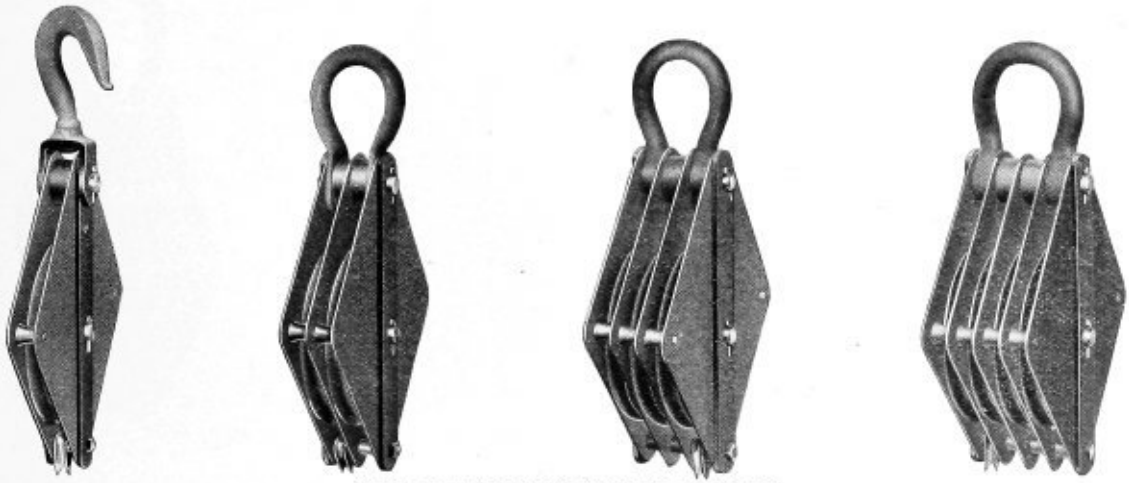
Note that the strap goes entirely around the shell, giving the Block the maximum of strength.

All of these blocks are fitted with our Patent Guard, to prevent any possibility of the rope leaving the sheave. This guard may be applied or removed at pleasure.

For Square Cheek Blocks with Detachable Hooks, see page 85.

ERICKSON SPECIAL SQUARE CHEEK WIRE ROPE BLOCKS

The Strongest Wire Rope Block on Earth. With Detachable Shackles and Swivel Hooks.

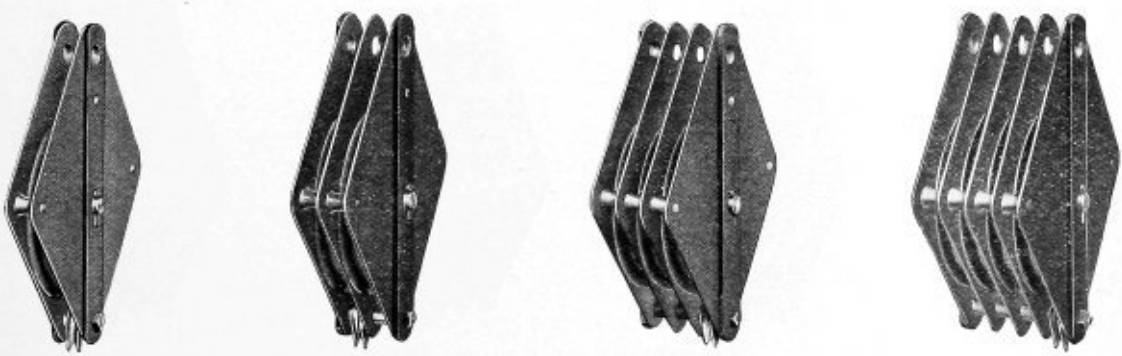


All Sheaves Self-Lubricating Bronze Bushed

ESTIMATED BREAKING STRAIN

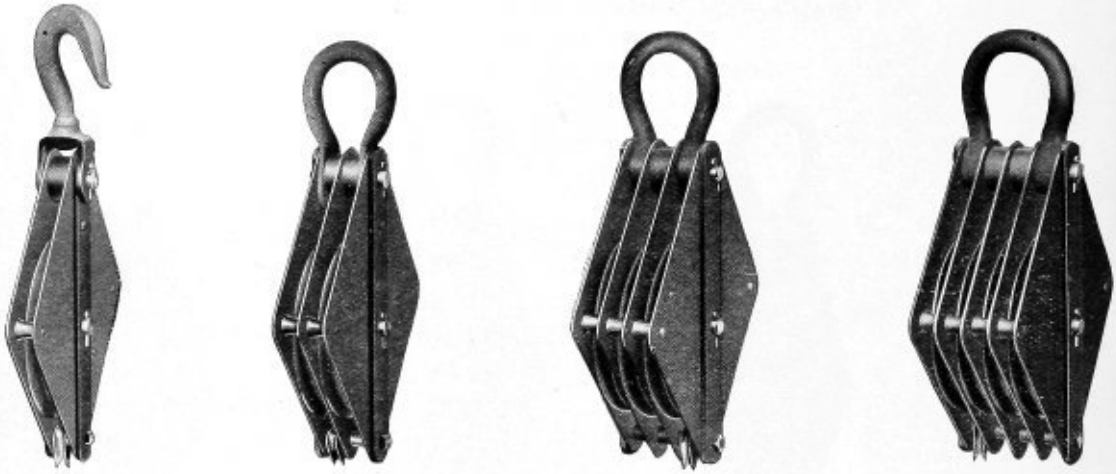
Size		With Shackle	With Hook
14-in.	Single	155,000 lbs.	35,000 lbs.
	Double	155,000 "	35,000 "
	Triple	172,000 "	.....
	Quadruple	200,000 "	.....
16-in.	Single	172,000 "	38,000 lbs.
	Double	172,000 "	38,000 "
	Triple	200,000 "	.....
	Quadruple	235,000 "	.....
18-in.	Single	235,000 "	47,000 lbs.
	Double	235,000 "	47,000 "
	Triple	265,000 "	.....
	Quadruple	298,000 "	.....
20-in.	Single	265,000 "	56,000 lbs.
	Double	265,000 "	56,000 "
	Triple	298,000 "	.....
	Quadruple	368,000 "	.....

Safe working load one-third to one-half breaking strain.



For list, see page 88.

ERICKSON SPECIAL SQUARE CHEEK WIRE ROPE BLOCKS



All Sheaves Self-Lubricating Bronze Bushed

WITH DETACHABLE SHACKLES

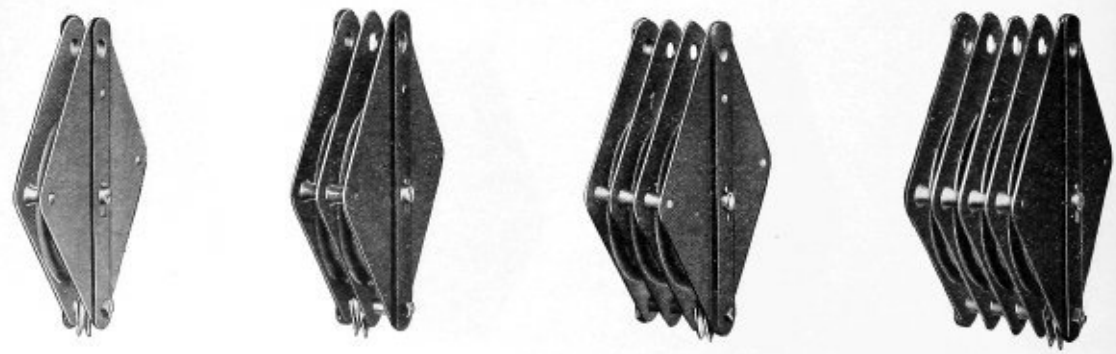
Size Sheaves	For Rope Diam.	Single	Double	Triple	Fourfold
14 x 2 x 1 3/8	3/4	$39.00	$53.25	$75.00	$94.00
16 x 2 x 1 1/2	7/8	52.00	69.75	88.00	126.00
18 x 2 3/8 x 1 5/8	1	87.00	109.50	133.00	157.75
20 x 2 1/2 x 1 3/4	1 1/4	98.00	128.50	158.00	217.25

Shackles on Single and Double Blocks are interchangeable.

WITH DETACHABLE HOOKS

Size Sheaves	For Rope Diam.	Single	Double		
14 x 2 x 1 3/8	3/4	$38.50	$51.25	.....	.....
16 x 2 x 1 1/2	7/8	44.00	61.50	.....	.....
18 x 2 3/8 x 1 5/8	1	62.00	85.00	.....	.....
20 x 2 1/2 x 1 3/4	1 1/4	80.50	110.50	.....	.....

Hooks on Single and Double Blocks are interchangeable.



For Breaking Strain, see page 87.

AWNING BLOCKS

Single

Double

WITH SWIVEL EYE

Galvanized Malleable Iron

In ordering, specify Number

Length of Shell..... inches	7/8	1	1 3/8	1 3/4	2	2 1/4
Size of Sheave..... inches	5/16 x 9/16	3/16 x 11/16	5/16 x 3/4	11/32 x 1	3/8 x 1 3/8	1/2 x 1 1/2
Single No.....	000	0	1	3	5	7
Price..... per dozen	.55	.60	.65	.90	1.40	2.00
Double No.....	0000	00	2	4	6	8
Price..... per dozen	.70	.75	1.10	1.60	2.25	2.80

PRESSED STEEL AWNING BLOCKS

SWIVEL EYE

No.	Size of Sheave inches	Length of Shell inches	For Rope Diam. inches	Per Dozen
0	1/2 x 1 1/4	1	1/8	$0.40
1	3/4 x 5/16	1 1/4	1/4	.45
3	1 x 3/8	1 1/2	5/16	.55

BLOCKS

WITH FAST EYE

Galvanized Malleable Iron and Brass

Single, no Becket — Single, with Becket — Double, no Becket — Double, with Becket

In ordering, specify Number and state if wanted with or without Becket.

Length of Shell.....inches	1	1 3/8	1 3/4	2	2 1/4	3	3 1/4	4	5
Size of Sheave.....inches	11/16 x 3/16	3/4 x 5/16	1 x 11/32	1 3/8 x 3/8	1 1/4 x 1/2	1 3/4 x 1/2	2 x 5/8	2 1/2 x 3/4	3 x 7/8
For Rope Diam..... "	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Single No.....	0	1	3	5	7	9	11	13	15
Galvanized Iron.....per dozen	.60	.65	.90	1.40	2.00	3.00	3.50	7.50	11.00
Plain Brass..... "	.90	1.25	2.50	3.75	4.00	6.00	9.00	....	.....
Polished Brass..... "	2.00	2.70	4.00	5.25	6.00	8.50	11.50	....	.....
Double No.....	00	2	4	6	8	10	12	14	16
Galvanized Iron.....per dozen	.75	1.10	1.60	2.25	2.80	4.00	5.00	9.25	13.50
Plain Brass..... "	1.25	2.00	3.75	5.00	6.00	8.50	11.00	....	.....
Polished Brass..... "	2.70	3.50	5.25	7.00	8.50	11.00	14.00	....	.....

BLOCKS

WITH GALVANIZED WROUGHT IRON LOOSE HOOKS
Galvanized Malleable Iron Shells

In ordering specify number and state if wanted with or without becket.

Single, no Becket — Single, with Becket

Length of Shell, inches	1 3/8	1 3/4	2	2 1/4	3	3 1/4	4	5
Size of Sheave inches	3/4 x 5/16	1 x 11/32	1 3/8 x 3/8	1 1/2 x 1/2	1 3/4 x 1/2	2 x 5/8	2 1/2 x 3/4	3 x 7/8
For Rope Diam. inches	5/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Single Number	1	3	5	7	9	11	13	15
Per Dozen	$2.75	3.00	3.60	4.20	5.15	5.75	9.00	13.20
Double Number	2	4	6	8	10	12	14	16
Per Dozen	$3.25	3.60	4.80	5.40	6.00	7.20	11.40	16.20

Double, no Becket — Double, with Becket

BLOCKS

WITH MATCH HOOKS
Galvanized Malleable Iron

In ordering specify number and state if wanted with or without becket.

Single, no Becket — Single, with Becket

Length of Shell, inches	1 3/8	1 3/4	2	2 1/4	3	3 1/4	4	5
Size of Sheave Inches	3/4 x 5/16	1 x 11/32	1 3/8 x 3/8	1 1/2 x 1/2	1 3/4 x 1/2	2 x 5/8	2 1/2 x 3/4	3 x 7/8
For Rope Diam. inches	5/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4
Single Number	1	3	5	7	9	11	13	15
Per Dozen	$5.00	$5.50	$6.00	$7.00	$8.00	$9.00	$12.00	$16.00
Double Number	2	4	6	8	10	12	14	16
Per Dozen	$6.00	$6.50	$7.25	$8.50	$9.75	$12.00	$16.50	$22.00

Double, no Becket — Double, with Becket

CAST IRON BLOCKS

FOR HARDWARE TRADE

Order by size inches.

Single, no Becket

SINGLE

Size Inches	For Diameter Rope	Japanned per doz.	Galvanized per doz.
1/2	1/8	$0.42	$0.63
5/8	5/16	.54	.74
3/4	1/4	.59	.80
1	5/16	.67	1.00
1 1/4	3/8	.80	1.30
1 1/2	7/16	1.00	1.85
1 3/4	7/16	1.40	2.60
2	1/2	1.85	4.00
2 1/2	3/4	3.30	6.30

DOUBLE

Size Inches	For Diameter Rope	Japanned per doz.	Galvanized per doz.
3/4	1/4	$0.85	$1.30
1	5/16	1.00	1.55
1 1/4	3/8	1.20	1.80
1 1/2	7/16	1.70	2.95
1 3/4	7/16	2.40	4.90
2	1/2	3.70	5.90
2 1/2	3/4	5.50	8.50

Double, no Becket

Cast Iron Blocks packed as follows:

Single, 1/2 inch to 1 3/4 inches, 1 dozen in a box.
" 2 " " 2 1/2 " 1/2 " " "

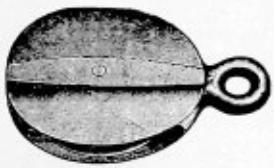
Double, 3/4 inch to 1 3/4 inches, 1 dozen in a box.
" 2 " 1/2 dozen in a box.
" 2 1/2 " 1/3 " " "

These Blocks not carried in stock; to order only.
We recommend Galvanized Malleable Iron Blocks, page 89.

ERICKSON ELECTRIC LIGHT BLOCKS

Galvanized Malleable Iron

FOR WIRE ROPE



Without Becket

Description	Length Shell, inches	Sheave Inches		Per Dozen
		Diam.	Thick.	
With Eye	5	4	1/2	$12.00
" " and Becket	5	4	1/2	12.25
" Wrought Single Hook	5	4	1/2	15.00

CHEEK HALYARD BLOCKS

Galvanized Malleable Iron and Polished Brass

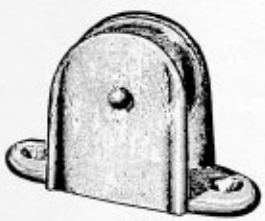
Single

Single Size of Sheave, inches	1 1/8 x 3/8	1 1/4 x 7/16	1 1/2 x 1/2	2 x 3/4	3 x 7/8
For Diameter Rope, inches	1/4	5/16	3/8	1/2	3/4
Single, Number	0	1	2	3	5
Galvanized Iron, each	$0.30	$0.35	$0.45	$0.70	$0.90
Polished Brass, each	.75	.85	.95	1.20	.....
Double Size Sheave, inches	1 1/4 x 7/16	1 1/2 x 1/2	2 x 3/4	.....	.....
For Diameter Rope, inches	5/16	3/8	1/2	.....	.....
Double Number	11	12	13	.....	.....
Galvanized Iron, each	$0.45	$0.55	$0.65	.....	.....
Polished Brass, each	1.25	1.40	2.00	.....	.....

DECK HALYARD BLOCKS

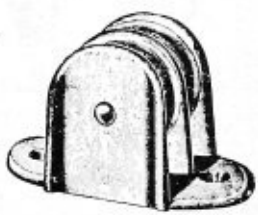
Galvanized Malleable Iron and Polished Brass

SINGLE



Single

No.	For Diameter Rope, inches	Size of Sheave, inches	Galvanized Malleable Iron, Each	Polished Brass, Each
0	5/16	1 1/4 x 3/8	$0.20	$0.80
1	3/8	1 1/2 x 1/2	.25	.90
3	1/2	2 x 5/8	.40	1.50
5	5/8	2 1/2 x 3/4	.65	2.00
7	3/4	3 x 7/8	1.00	2.75



Double

DOUBLE

No.	For Diameter Rope, inches	Size of Sheave, inches	Galvanized Malleable Iron, Each	Polished Brass, Each
2	3/8	1 1/2 x 1/2	$0.50	$1.25
4	1/2	2 x 5/8	.80	2.25

CHEEK HALYARD BLOCK

FOR WIRE ROPE

Size	Diameter of Rope	Size of Sheave	Galvanized Iron, Each	Polished Brass, Each
No. 1	1/4 and 5/16 inch	1 7/8 x 3/8 inch	$0.50	$1.00
No. 2	5/16 " 3/8 "	3 x 1/2 "	.75	1.35
No. 3	3/8 " 7/16 "	4 5/8 x 1/2 "	1.25	2.50

BRONZE YACHT BLOCKS

The Strongest, Neatest and Cheapest Yacht Block

These Blocks are made with great care, are highly polished and are a very handsome and strong Block. Shells are made of best Bronze mixture. The Sheaves are fitted with Tobin Bronze Pins. The Hooks are made of Manganese Bronze and are as strong as steel. The many fittings for these blocks are shown in the cuts, and any of the fittings shown may be had with either the Single or the Double Block.

Note that the Blocks are shown with Becket in B, D and E, and without Becket in A, C and F.

A Loose Front Hook — B Loose Side Hook — C Front Shackle — D Side Shackle — E Reversed Front Shackle — F Reversed Side Shackle

Size No.	Corresponds with Wood Block	Diameter of Rope	Size of Sheave	Single with Hook or Shackle	Double	Single, Special Sheave for Wire Halyards	Double, Special Sheave for Wire Halyards
1	3 inches	$\frac{3}{8}$ inch	$1\frac{3}{8} \times \frac{7}{16}$ inches	$0.65	$1.15	$0.90	$1.50
2	4 "	$\frac{1}{2}$ "	$1\frac{7}{8} \times \frac{9}{16}$ "	1.00	1.50	1.25	1.75
3	5 "	$\frac{5}{8}$ "	$2\frac{5}{16} \times \frac{11}{16}$ "	1.25	2.25	1.50	2.00

G Gaff Bridle — H Coleman Hook — I Deck Leader — J For Jib Sheets — K Jib Sheet Leader — P The Puzzle—Universal Swivel Sheet Leader

Size No.	Corresponds with Wood Block, inches	Diameter of Rope, inches	Size of Sheave inches	Single with G Fitting Each	Single with H, I and K Fitting, Each	Single with P Fitting Each	Double with G, I and K Fitting, Each	Jib Sheet Fitting J Pair
1	3	$\frac{3}{8}$	$1\frac{3}{8} \times \frac{7}{16}$	$1.00	$0.80	$1.50	$1.50	$2.00
2	4	$\frac{1}{2}$	$1\frac{7}{8} \times \frac{9}{16}$	1.35	1.15	2.00	2.00	2.50
3	5	$\frac{5}{8}$	$2\frac{5}{16} \times \frac{11}{16}$	1.75	1.50	2.25	2.75	3.00

R Swivel Hook — W For Wire Rope — S Snatch

STYLE R AND S FOR MANILA ROPE

Size No.	Corresponds with Wood Block, inches	Diameter of Rope inches	Size of Sheave inches	Each
1	3	$\frac{3}{8}$	$1\frac{3}{8} \times \frac{7}{16}$	$0.80
2	4	$\frac{1}{2}$	$1\frac{7}{8} \times \frac{9}{16}$	1.15
3	5	$\frac{5}{8}$	$2\frac{5}{16} \times \frac{11}{16}$	1.50

STYLE W FOR WIRE ROPE

Size No.	Dia. Rope, inches	Single, Each	Double, Each
1	$\frac{1}{4}$	$0.75	$1.40
2	$\frac{5}{16}$	1.25	1.75

NOTE—Order by Letters, giving Size, Single or Double, and if with or without Beckets.

Complete Assortment of these goods in our Marine Catalog. If interested, send for it.

CRESCENT EDGE LIGNUMVITAE YACHT BLOCKS

Shells are Screwed Together Pins are of Tobin Bronze

They are handsomely polished and every detail of construction is the best possible.

DESCRIPTION

A. Loose Swivel Screw Eye Bolt.
AA. Jib Sheet with Heart Shackle.
B. Reverse Shackle.
C. Sister Hook to Side.
D. Loose Swivel Hook.
E. Coleman Hook to Front.
F. Loose Hook to Side.
G. Gaff Bridle.
H. Shackle to Front.
I. Loose Hook to Side.
K. Ring.
L. Fiddle Block with Stiff Hook.
LL. Fiddle Block with Shackle.
M. Punched Eye for Gaff.
N. Shackle to Front.
O. Ring.
P. Stiff Jaw and Bolt.
Q. Deck Block with Bolt and Nut.
R. Pig Tail Hook.
S. Universal Swivel Sheet Leader.
T. Sister Hook.
U. Stiff Hook to Front and Becket.
V. Long Loose Hook to Front and Becket.
W. Loose Hook to Front and Becket.
Y. Deck Halyard or Deck Sheet Block.

WITH ROLLER BUSHED BRASS SHEAVES

Single Blocks, Each

Size Shell, inches Size Rope, Diameter, inches	2½, 3 ⅝ and ¾	3½ ⅞	4 1	4½ 1⅛	5 1¼	6 1½
B. I. M. N. O. T. U. W. each	$1.50	$1.60	$1.75	$1.85	$2.10	$2.75
A. R. "	2.70	2.85	3.00	3.10	3.40	4.00
S. "	3.20	3.30	3.40	3.50	3.70	4.40
E. "	1.90	2.00	2.20	2.30	2.50	3.20
G. "	2.40	2.50	3.00	3.10	3.70	4.40
Q. "	2.70	3.00	3.40	3.50	4.20	4.90
Y. "	2.30	2.60	2.80	3.10	3.40	4.00
V. "	2.70	2.85	3.40	3.50	3.70	4.40
AA. per pair	5.10	5.30	5.60	5.80	6.30	7.60

Double Blocks, Each

C. F. H. K. P. each	$2.60	$2.75	$3.00	$3.25	$3.70	$4.85
D. "	4.30	4.45	4.70	4.90	5.40	6.50

Triple Blocks, Each

Same Fittings as on B. C. F. H. K. P. each	$4.50	$4.80	$5.25	$5.55	$6.30	$8.25

Fiddle Blocks, Each

Size Shell, inches Size Rope, Diameter, in		3 and 4 ⅝ and ¾	3½ and 5 ¾	4 and 6 ⅞	5 and 7 1
L. LL.	each	$5.60	$6.20	$7.50	$10.00

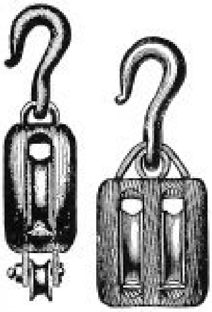
ASH YACHT BLOCKS

GALVANIZED IRONWORK

Galvanized Patent Roller Bushed Sheaves

A splendid Yacht Block at a moderate price.

The prices below include blocks fitted with Sister Hooks, Shackles, Punched Eye, Rings to front. See page 93.



Size Shell	For Rope Dia.	Single	Double	Triple
3 inches	⅜	$1.30	$2.20	$3.90
3½ "	⅜	1.40	2.35	4.20
4 "	½	1.50	2.50	4.50
4½ "	9/16	1.60	2.75	4.80
5 "	⅝	1.75	3.00	5.25
6 "	¾	2.20	3.75	6.60

Price of Single Blocks with Bridle Attachments Style G

Size inches	3	3½	4	4½	5	6
Each....	$2.10	$2.25	$2.70	$2.85	$3.50	$3.65

Net Extras for Special Fittings

Each — See description on page 93.

- $0.35....1 "Coleman" Hook "E" & "J."
- .65....1 Metaline Bushed Sheave. Use list headed (Roller Bushed Composition Sheaves.)
- .90....1 Loose Swivel Screw Eye Bolt "A."
- .90....1 Stiff Hook to Side, No. 2 Double or Single.
- .90....1 Shackle to Side, No. 7 Single or Double, or G.
- .90....1 Ring to Side, No. 3, Single or Double.
- .90....1 Shackle to Swivel, No. 9 Single or Double.
- .90....1 Pigtail Hook "R."
- .90....1 Stiff Swivel Hook, No. 1.
- .90....1 Loose Swivel Hook "D," and No. 6.
- 1.20....1 Heart Shackle "BB" and O anti-corrosive metal.
- 1.20....1 Swivel Attachment "S" anti-corrosive metal.

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

IRON SHEAVES

FOR MANILA ROPE

Dimensions			Prices			Dimensions			Prices		
Diameter inches	Thickness inches	Hole for Pin Full Size inches	Iron Bushed Each	Roller Bushed Each	Phosphor Bronze or Metaline Bushed Each	Diameter inches	Thickness inches	Hole for Pin Full Size inches	Iron Bushed Each	Roller Bushed Each	Phosphor Bronze or Metaline Bushed Each
1¾	½	⅜	$0.09	$0.40	....	8	2¼	⅞	$1.85	$3.45	$4.50
2	½	⅜	.10	.42	....	9	1¾	⅞	1.50	.....	.....
2¼	⅝	⅜	.12	.45	$0.70	9	2	1	1.80	3.60	.....
3	¾	⅜	.20	.55	.90	9	2⅝	1	2.25	4.50	5.50
3	1⅛	½	.30	.75	1.40	9½	1⅝	⅞	1.40	2.65	3.60
3½	1	½	.25	.65	1.40	9½	1⅞	⅞	1.50	2.85	4.20
3½	1¼	½	.40	.85	1.60	10	1⅝	⅞	1.50	2.85	3.90
4¼	1	½	.30	.75	1.50	10	1⅞	⅞	1.70	3.15	4.85
4¼	1⅛	½	.32	.85	1.60	10	2	⅞	1.95	.....	....
4½	1⅜	⅝	.50	1.20	1.90	10	3	1	3.00	6.00	7.00
4¾	1⅛	⅝	.35	1.00	1.85						
4¾	1⅜	⅝	.40	1.15	2.00	11	1¾	⅞	1.70	3.20	4.90
5	1⅜	⅝	.60	1.30	2.00	11	2¼	1	2.00	3.50	5.95
5½	1⅜	⅝	.50	1.25	2.10	11	3½	1¼	4.00	.....	9.00
5½	1⅛	⅝	.45	1.10	1.95	11¾	4¼	1½	6.50	.....	13.00
5¾	1⅞	¾	1.20	2.40	3.00	12	1½	1	1.80	4.00	.....
6	1¾	¾	.85	1.85	....	12	1¾	1	2.00	4.50	.....
6	2	¾	1.05	2.10	....	12	2	1	2.25	5.00	.....
6¼	1¼	⅝	.55	1.35	2.25	12	2⅝	1⅛	6.00	.....	8.00
6¼	1¼	¾	.60	1.45	2.50	12½	4½	1½	9.00	.....	18.00
6¼	1½	¾	.65	1.60	2.75	14	2	1	3.50	.....	.....
6¾	2⅛	¾	1.50	2.85	3.75	14	2¼	1¼	4.00	.....	.....
7	1⅜	¾	.75	1.70	....	14	2⅞	1¼	7.00	.....	11.00
7	1½	¾	.85	....	....	15	3⅜	1½	9.50	.....	15.00
7	1¾	¾	.88	....	....	16	2	1	4.75	8.00	.....
7	2	¾	.95	....	....	16	2¼	1¼	6.00	.....	.....
8	1⅜	¾	.90	1.90	2.95	16	3⅞	1½	14.00	.....	19.00
8	1⅝	¾	1.05	2.10	3.25	18	2	1	6.00	.....	.....
8	1¾	⅞	1.35	2.35	....	18	2¼	1¼	7.00	.....	.....
8	2	⅞	1.70	3.30	....	18	2½	1¼	8.00	.....	.....

NOTE.—We list only sizes carried in stock. Can furnish any size to order.

IRON SHEAVES

FOR WIRE ROPE

DEEP GROOVES

Dimensions			Prices			Dimensions			Prices		
Diam. inches	Thickness inches	Hole for Pin Full Size inches	Iron Bushed Each	Roller Bushed Each	Self-Lubricating Bushed Each	Diam. inches	Thickness inches	Hole for Pin Full Size inches	Iron Bushed Each	Roller Bushed Each	Self-Lubricating Bushed Each
3	1/2	3/8	$0.15	.....	.....	10 1/2	1 5/8	7/8	$2.50	.....	$3.75
4	3/4	1/2	.30	.....	.....	12	1 3/4	1	3.00	.....	4.75
4	7/8	5/8	.....	.90	.....	12	2	1	4.00	.....	7.00
5	7/8	5/8	.45	.....	.....	14	2	1 1/8	3.75	.....	5.50
6	1	3/4	.75	1.40	.....	14	2 1/8	1	5.00	.....	8.00
7	1 1/8	3/4	1.30	.....	.....	16	2	1 1/4	4.75	.....	6.75
8	1 1/8	3/4	1.35	2.12	.....	18	2 3/8	1 1/4	6.60	.....	8.00
8	1 1/4	3/4	1.50	.....	.....	20	2 1/2	1 3/8	7.50	.....	9.50
9 1/2	1 1/2	3/4	2.00	.....	$3.00	22	2 5/8	1 1/2	9.00	.....	14.00
10	1 3/4	1	2.40	.....	4.00	.....	.....	.....	.....	.....	.....

IRON SHEAVES FOR CHAIN

Dimensions				Prices	Dimensions				Prices
Diam. inches	Thickness inches	Hole for Pin, Full Size, inches	For Chain inches	Iron Bushed Each	Diam. inches	Thickness inches	Hole for Pin, Full Size inches	For Chain inches	Iron Bushed Each
5	1 5/8	5/8	3/8 and 7/16	$0.80	10	2	1	7/16 and 1/2	$2.80
6	1 1/2	3/4	5/16 " 3/8	.85	12	2 1/4	1	1/2 " 9/16	3.80
8	1 1/2	3/4	5/16 " 3/8	1.20	14	2 1/2	1 1/4	1/2 " 5/8	9.00
8	2	1	7/16 " 1/2	1.70	....	.....	.....	.....	.....

NOTE.—We list only sizes carried in stock. Can furnish any size to order.
For Sheaves extra heavy and with Axle and Boxes, see page 178.

LIGNUM-VITAE SHEAVES FOR IRON AND ROPE STRAPPED BLOCKS FOR MANILA ROPE

Patent or Roller Bushed

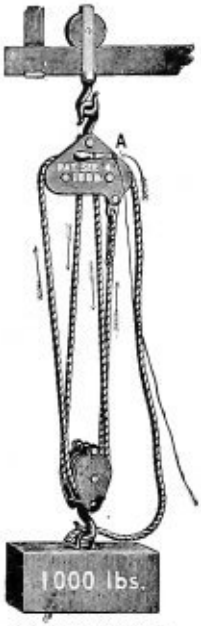
Iron Bushed

Size of Sheave inches	For Block inches	Iron Bushed Each	Roller Bushed Each	Self-Lubricating Bushed Each	Size of Sheave inches	For Block inches	Iron Bushed Each	Roller Bushed Each	Self-Lubricating Bushed Each
1 3/4 x 1/2 x 3/8	3	$0.09	$0.40	.....	7 1/4 x 1 1/4 x 3/4	11	$0.70	$1.65	$2.60
2 x 1/2 x 3/8	3 1/2	.10	.42	$0.60	7 1/4 x 1 1/2 x 3/4	*11	.85	1.80	2.95
2 1/4 x 5/8 x 3/8	4	.12	.45	.70	8 x 1 3/8 x 3/4	12	.90	1.90	2.95
2 3/4 x 3/4 x 3/8	4 1/2	.15	.50	.80	8 x 1 5/8 x 3/4	*12	1.05	2.10	3.25
3 x 3/4 x 3/8	5	.20	.55	.90	9 x 1 1/2 x 3/4	13	1.20	2.40	3.25
3 1/2 x 7/8 x 1/2	6	.25	.65	1.35	9 x 1 3/4 x 3/4	*13	1.35	2.55	3.45
4 1/4 x 1 x 1/2	7	.30	.75	1.50	9 1/2 x 1 5/8 x 7/8	14	1.40	2.65	3.45
4 3/4 x 1 1/8 x 5/8	8	.35	1.00	1.85	9 1/2 x 1 7/8 x 7/8	*14	1.50	2.85	3.75
4 3/4 x 1 3/8 x 5/8	*8	.40	1.15	2.00	10 x 1 5/8 x 7/8	15	1.50	2.85	3.80
5 1/2 x 1 1/8 x 5/8	9	.45	1.20	2.05	10 x 1 7/8 x 7/8	*15	1.70	3.15	4.10
5 3/8 x 1 3/8 x 5/8	*9	.50	1.25	2.10	11 x 1 3/4 x 7/8	16	1.70	3.20	4.25
6 1/4 x 1 1/4 x 3/4	10	.55	1.35	2.40	11 x 2 1/4 x 1	*16	2.00	3.50	5.50
6 1/4 x 1 1/2 x 3/4	*10	.65	1.60	2.75	.....	.....	.....	....	....

*Thick mortise.

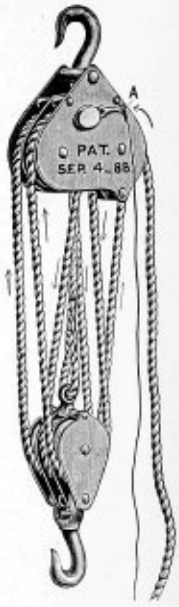
SURE GRIP STEEL TACKLE BLOCK

Will hold Load at any Point without Fastening the Rope



Cut Represents
Nos. 3, 4, 5 and 6

THE BRAKE IS ABSOLUTELY AUTOMATIC



Cut Represents
Nos. 4½, 5½ and 6½

INSTRUCTIONS FOR REEVING

Enter rope at A, pass wedge, and follow arrows as shown in cut. It will be noticed the two center ropes *coming in contact with wedge* always travel in same direction at same time. Take twist out of rope.

THE HEAVIER THE LOAD THE BETTER THE GRIP

At the same time the brake is susceptible of being disengaged by very slight pressure. The body of block is made of steel plates. The pins are cold rolled steel. The essential castings are malleable iron, making the strongest and safest possible combination of materials, thus affording immunity from accidents in the highest degree. The brake is a fluted wedge dropping between two ropes in such a manner that the load is brought on all the strands of the rope at the same time. The brake does not flatten the rope consequently the wear upon it is reduced to a minimum.

BLOCKS ONLY. ROPE MARKET PRICE PER LB.

No.	For Rope	Capacity lbs.	One Man Can Lift lbs.	Tested to lbs.	Each
3	⅜ in.	600	300	2,800	$3.00
4	½ "	1,000	350	3,800	5.50
5	⅝ "	1,800	400	4,500	7.00
6	¾ "	2,500	450	5,800	8.50
4½	½ "	3,000	600	7,000	10.00
5½	⅝ "	3,500	700	8,000	12.00
6½	¾ "	5,000	850	9,000	14.00

PRICE LIST OF OVERHEAD TRACK, ETC.

Track complete, hangers 3½ feet apart from center to center, except 4,000 lb. track, which is 3 feet.

				Per Foot
350 lbs. Capacity,	1½ inch x	⅜ inch iron,	Hangers A, 5 lbs. each	$0.20
500 " "	1¾ " x ½ " " "		B, 8 " "	.25
700 " "	2 " x ½ " " "		B, 8 " "	.30
800 " "	2¼ " x ½ " " "		C, 10 " "	.40
1,000 " "	3 " x ½ " " "		C, 10 " "	.50
1,500 " "	3½ " x ½ " " "		D, 16 " "	.65
4,000 " "	4 " x ⅝ " " "		E, 25 " "	1.00

Hangers, each	20c.	25c.	25c.	50c.	50c.	85c.	$1.75
Trolleys	350 lbs.	500 lbs.	700 lbs.	800 lbs.	1,000 lbs.	1,500 lbs.	4,000 lbs.
Single, each	$0.80	$1.00	$1.50	$1.75	$2.50	$3.00	$4.00
Double "	1.75	2.25	3.00	3.50	5.00	6.00	8.00

CHAIN HOISTS

COMPARISON OF SPEED

Capacity in lbs.	Pull in lbs. on Hand Chain to Lift Full Load			Feet of Hand Chain to be Pulled by Operator to Lift Load 1 ft.			Net Weight in Pounds Regular Lift			Hoisting Speeds feet per Minute Attainable and Number of Men Required to Hoist Full Loads without Pulling over 80 lbs. per Man					
	Peerless	Screw	Differential	Peerless	Screw	Differential	Peerless	Screw	Differential	Peerless		Screw		Differential	
										Speed	No. Men	Speed	No. Men	Speed	No. Men
500	50	20	72	14.0	64.0	18	46	41	22	9.80	1	2.70	1	6.0	1
1,000	64	49	122	20.3	60.5	24	52	68	30	8.50	1	2.50	1	6.0	2
2,000	81	71	216	31.5	76.5	30	80	75	51	4.75	1	2.00	1	3.7	3
3,000	114	99	246	34.5	89.5	36	112	106	81	4.50	2	1.75	2	2.5	3
4,000	124	129	308	40.5	98.0	42	151	160	122	4.25	2	1.55	2	2.3	4
6,000	130	163	557	59.0	98.0	38	226	247	180	2.50	2	1.50	2	2.3	7
8,000	128	190	....	81.0	128.0	..	227	325	....	1.75	2	1.10	3	....	..
10,000	112	293	....	118.0	106.5	..	320	483	....	1.35	2	1.20	4	....	..
12,000	134	293	....	118.0	110.0	..	335	555	....	1.15	2	1.10	4	....	..
16,000	125	403	....	177.0	148.0	..	435	735	....	.70	2	.75	5	....	..
20,000	181	358	....	154.5	198.0	..	482	785	....	.72	3	.55	5	....	..
30,000	208*	424	....	103.0*	296.0	..	1,012	1,179	....	.97	3*	.35	5	....	..
40,000	186*	370	....	154.5*	396.0	..	1,400	2,370	....	.71	3*	.50	5	....	..

*On each hand chain.

Capacity in tons	Pull in lbs. Required on Hand Chain to Lift Full Loads			Feet of Hand Chain to be Pulled by Operator to Lift Load 1 foot High			Hoisting Speeds feet per Minute Attainable and No. of Men Required for Hoisting Full Loads without Pulling over 80 lbs. per Man							
							Triplex				Duplex		Differential	
	Triplex	Duplex	Differential	Triplex	Duplex	Differential	Full Load	Half Load	Quarter Load	No. of Men	Full Load	No. of Men	Full Load	No. of Men
¼	....	....	72	....	....	18	....	....	....	..	....	..	6.	1
½	62	68	122	21	40	24	8.	16.	24.	1	4.	1	6	2
1	82	87	216	31	59	30	4.	8.	12.	1	2.	1	3.70	3
1½	110	94	246	35	80	36	4.8	9.6	14.4	2	2.40	2	2.50	3
2	120	115	308	42	93	42	3.6	7.2	10.8	2	1.80	2	2.30	4
3	114	132	557	69	126	38	2.3	4.6	6.9	2	1.10	2	2.30	7
4	124	142	....	84	155	....	1.7	3.5	5.2	2	.80	2	....	..
5	110	145	....	126	195	....	1.3	2.6	3.9	2	.65	2	....	..
6	130	145	....	126	252	....	1.1	2.2	3.3	2	.50	2	....	..
8	135	160	....	168	310	....	.8	1.6	2.4	2	.35	2	....	..
10	140	160	....	210	390	....	.6	1.2	1.8	2	.30	2	....	..
12	130*	....	....	126*	....	....	1.1	2.2	3.3	4	....	..	....	..
16	135*	....	....	168*	....	....	.8	1.6	2.4	4	....	..	....	..
20	140*	....	....	210*	....	....	.6	1.2	1.8	4	....	..	....	..

*On each of the two hand chains.

The speed of a chain block is governed by the pull required on the hand chain and the distance the hand chain must travel to lift the load the required distance.

The above speeds are given for short lifts with men accustomed to the work; for continuous easy lifting two-thirds of these speeds are attainable.

CHAIN HOISTS

The average workman in using a Chain Block frequently overloads it to several times its capacity. Although all makes are tested to a liberal factor of safety, such overloading will stretch the chain until its links no longer fit properly in the sheave, thereby causing the links to ride or wedge, making hoisting a burden.

Our experience of over forty years in all types of Chain Hoists has proven this to be the verdict after examination of so-called defective blocks. While all makes of these blocks will lift more than the guarantee on them, no manufacturer can be expected to replace an overloaded block.

"Differential"

WESTON'S DIFFERENTIAL PULLEY BLOCKS

DIRECT

They hold the load at any point and cannot run down. One man can lift 1,000 lbs.

List Complete

Capacity	Each	Hoist feet	Shortest Distance between Hooks inches	Length of Chain feet	Net Weight lbs.
¼ ton	$18.00	6	17	22	20
½ "	21.00	7	21	26	31
1 "	28.00	8	26	30	53
1½ "	36.00	8½	32	33	90
2 "	45.00	9	39	36	128
3 "	60.00	10	44	38	167

Allow 4 feet of chain for each extra foot of hoist.

We can furnish these Blocks to hoist any length desired.

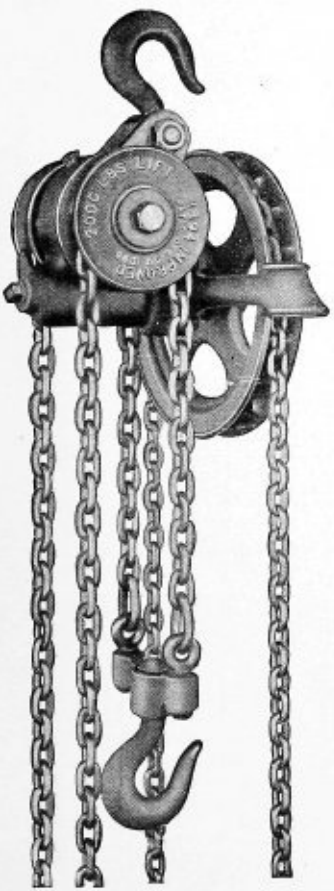
LIST OF PARTS FOR DIRECT BLOCKS

Capacity	Sheaves		Yokes and Hooks		Pins		Regular Chains Complete each	Extra Chain per foot
	Top	Bottom	Top	Bottom	Top	Bottom		
¼ ton	$3.60	$0.90	$3.00	$2.25	$0.40	$0.30	$10.50	$0.70
½ "	4.80	1.30	3.75	3.00	.50	.40	12.50	.70
1 "	6.00	1.50	4.50	3.75	.50	.40	17.00	.75
1½ "	8.40	1.90	5.50	4.50	.60	.50	21.50	.80
2 "	12.00	2.25	7.50	5.50	.60	.50	27.00	.85
3 "	15.60	3.75	11.00	8.00	.70	.60	36.00	1.00

HARRINGTON IMPROVED SCREW HOISTS

1894 PATENT

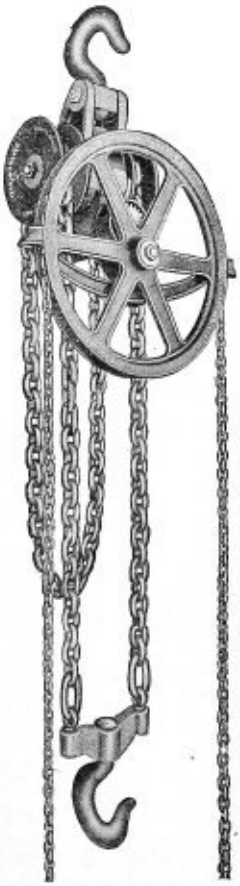
While not so fast as the Peerless, it is a powerful and compact block. It is built to withstand the wear and tear of hard usage. The worm gear is made of bronze with square hubs, it is driven by a steel worm. The load wheels have square holes fitted to a square hub on the worm gear, and are reversible so that when one side is worn the wheels can be taken off and reversed. Load is carried on two distinct chains. A thrust screw and bronze washer are placed at the end of the worm, to obtain fast or slow speed in lowering.



500 to 12,000

Capacity in Pounds	Regular Lift in Feet	Price of Hoist, Regular Lift	Price of Extra Lift, per Foot	Minimum Distance Between Hooks, in Inches	Weight of Hoist, in Pounds	Pull on Hand Chain to Lift Full Load	Feet of Chain Handled to Lift Load One Foot	Number of Strands of Load Chain
500	8	$22.50	$1.00	14½	41	20	64.0	2
1,000	8	25.00	1.20	16	68	49	60.5	2
2,000	8	30.00	1.50	17	75	71	76.0	2
3,000	8	40.00	1.75	20	106	99	89.5	2
4,000	9	50.00	2.00	22	160	129	98.0	2
6,000	10	75.00	2.20	28	247	163	98.0	2
8,000	10	95.00	2.40	31	325	190	128.0	2
10,000	12	140.00	3.00	39	483	293	106.5	2
12,000	12	180.00	3.75	39	555	283	110.0	2
16,000	12	210.00	4.00	42	735	403	148.0	2
20,000	12	275.00	4.25	43	785	358	198.0	2
30,000	12	340.00	6.00	51	1,179	424	296.0	4

We can furnish to hoist any desired length. For prices of parts, see pages 101 and 102. For comparison of speed of hoists, see page 97.

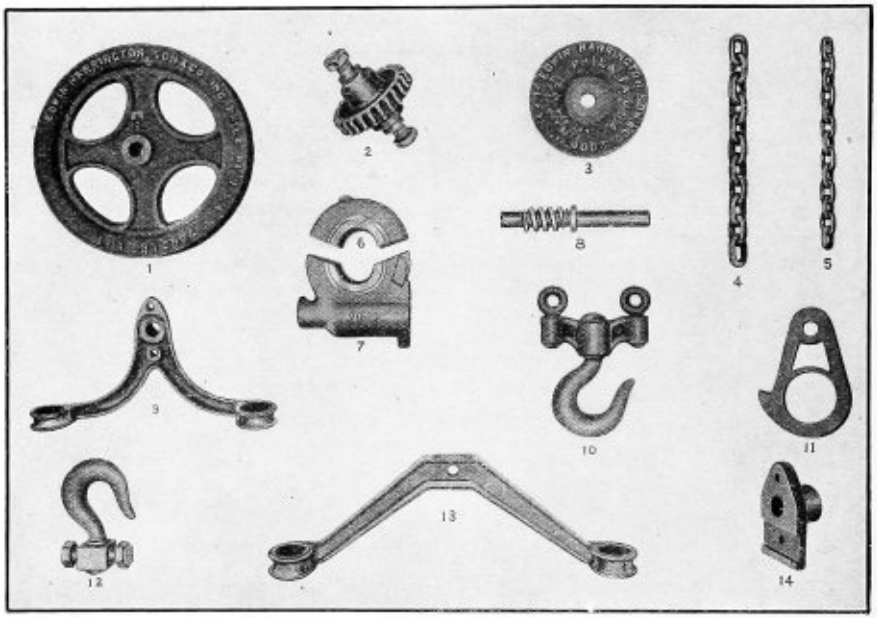


16,000 and 20,000

PARTS OF HARRINGTON SCREW HOIST

OLD STYLE

1876 Patent



REVISED LIST TO TAKE EFFECT JULY 1, 1909
PRICES OF PARTS OF OLD STYLE SCREW HOIST, MODEL OF 1876

List No	Name	500	1,000	2,000	3,000	4,000	6,000
1	Hand Wheel	1.00	1.30	1.50	2.50	2.80	5.00
2	Worm Gear	3.00	3.20	4.00	5.00	6.00	7.00
3	Load Wheels, (2)	1.60	1.80	2.00	3.00	3.50	6.00
4	Load Chain, per foot	.30	.35	.40	.45	.47	.50
5	Hand Chain, per foot	.25	.25	.25	.25	.25	.25
6 & 7	Case and Cap	1.50	2.00	2.50	4.00	5.50	9.50
8	Worm	1.00	1.50	1.50	2.50	3.20	6.50
9	Hand Chain Guard	.70	.90	.90	1.20	....	....
10	Bottom Hook and Swivel	1.70	2.00	2.60	3.50	4.10	5.20
11	Side Plates, (2)	.60	.80	.90	1.30	1.80	4.00
12	Top Hook and Swivel	1.70	2.00	2.60	3.50	4.10	5.20
13	Hand Chain Guard	....	....	....	....	1.50	2.00
14	Gland	....	....	....	....	2.00	3.00

List No.	Name	8,000	10,000	12,000	16,000	20,000
1	Hand Wheel	7.00	8.00	11.50	11.50	11.50
2	Worm Gear	9.00	16.00	16.00	23.00	23.00
3	Load Wheels, (2)	8.50	10.50	15.00	18.00	24.00
4	Load Chain, per foot	.50	.75	.90	1.10	1.10
5	Hand Chain, per foot	.30	.35	.35	.35	.35
6 & 7	Case	11.00	16.00	16.00	20.00	20.00
8	Worm	7.00	12.00	12.00	16.00	17.00
9	Hand Chain Guard	....	....	....	....	....
10	Bottom Hook and Swivel	11.00	13.50	19.50	23.00	35.00
11	Side Plates, (2)	6.00	10.00	10.00	14.00	15.00
12	Top Hook and Swivel	11.00	13.50	19.50	23.00	35.00
13	Hand Chain Guard	3.00	4.00	7.00	7.00	7.00
14	Gland	3.50	5.00	5.00	5.00	6.00

For Prices of Complete Chains, see pages 101 and 102.

Flaring Hand Chain Guards as shown on page 101 can be furnished if wanted.

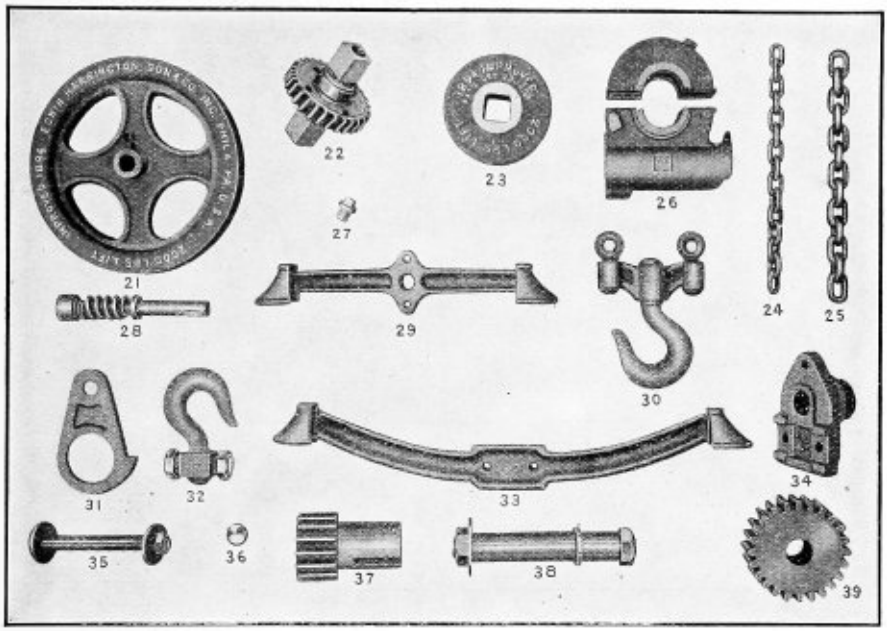
NOTE.—In ordering parts always give number of part, capacity of Hoist, and year of Patent, 1876 or 1894.

For 1894 parts see pages 101 and 102.

PARTS OF HARRINGTON IMPROVED SCREW HOISTS

1894 Patent

500 TO 6,000 LBS. CAPACITY



REVISED LIST TO TAKE EFFECT JULY 1, 1909
PRICES OF PARTS OF IMPROVED SCREW HOISTS, MODEL OF 1894
500 TO 6,000 LBS. CAPACITY

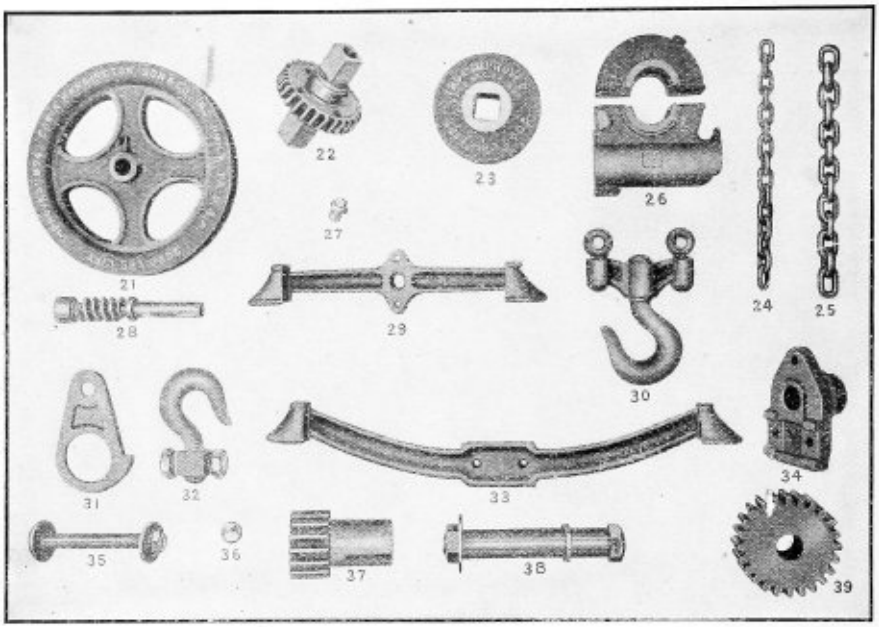
List No.	Name	500	1,000	2,000	3,000	4,000	6,000
21	Hand Wheel	1.00	1.50	1.50	2.50	2.80	5.00
22	Worm Gear	3.00	3.20	4.00	5.00	6.00	7.00
23	Load Wheels (2)	1.60	1.80	2.00	3.00	3.50	6.00
24	Hand Chain, per ft.	.25	.25	.25	.25	.25	.25
25	Load Chain, per ft.	.30	.35	.40	.45	.47	.50
26	Case and Cap	1.50	2.00	2.50	4.00	5.50	9.50
27	Thrust Screw	.30	.40	.40	.50	.60	1.50
28	Worm	1.00	1.50	1.50	2.50	3.20	6.50
29	Hand Chain Guard†	.70	.90	.90	1.20	....	....
30	Bottom Hook and Swivel	1.70	2.00	2.60	3.50	4.10	5.20
31	Side Plates, (2)	.60	.80	.90	1.30	1.80	4.00
32	Top Hook and Swivel	1.70	2.00	2.60	3.50	4.10	5.20
33	Hand Chain Guard †	....	....	....	....	1.50	2.00
34	Gland	....	....	....	....	2.00	3.00
35	Center Bolt and Washers	.30	.40	.50	.55	.60	1.00
36	Thrust Washer	.20	.20	.20	.25	.30	.50
	Hand Chain, Regular Lift	4.25	4.25	4.25	4.50	5.00	5.50
	Load Chain, Regular Lift, with Hook and Swivel	7.10	8.56	10.10	11.94	13.97	17.20

For parts of larger sizes, see page 102.
†Old Style Hand Chain Guards as shown on pages 9 and 13 can be furnished for this model if desired.
NOTE.—In ordering parts always give number of part, capacity of Hoist, and year of Patent, 1876 or 1894.
For 1876 parts see page 100.

PARTS OF HARRINGTON IMPROVED SCREW HOISTS

1894 PATENT

8,000 to 30,000 Pounds Capacity



REVISED LIST TO TAKE EFFECT JULY 1, 1909
PRICES OF PARTS OF IMPROVED SCREW HOISTS, MODEL OF 1894
8,000 TO 30,000, LBS. CAPACITY

List No.	Name	8,000	10,000	12,000	16,000	20,000	30,000
21	Hand Wheel	7.00	8.00	11 50	12.00	12 00	12.00
22	Worm Gear	9.00	16.00	16.00	23.00	23.00	23.00
23	Load Wheels (2)	8.50	10.50	15.00	18.00	20.00	18.00
24	Hand Chain, per ft	.30	.35	.35	.35	.35	.35
25	Load Chain, per ft	.55	.75	.90	1.10	1.10	1.10
26	Case and Cap	11 00	16.00	16.00	20 00	20.00	20.00
27	Thrust Screw	1.50	2.00	2.00	2.00	2.00	2.00
28	Worm	7.00	12 00	12.00	16.00	16.00	16.00
30	Bottom Hook and Swivel	11.00	13.50	19.50	23.00	35.00	44.00
31	Side Plates (2)	6.00	10 00	10.00	14.00	14.00	30.00
32	Top Hook and Swivel	11 00	13.50	19.50	23.00	35.00	44.00
33	Hand Chain Guard†	3 00	4.00	7.00	8.00	8.00	8.00
34	Gland	3.50	5.00	5.00	6.00	8.00	6.00
35	Center Bolt	1.50	2.50	2.50	3.00	3.00	3.00
36	Thrust Washer	.50	1.00	1.00	1.00	1.00	1.00
37	Pinion	....	....	....	5.00	7.00	5.00
38	Stud	....	....	....	3 00	3.00	3.00
39	Gear	....	....	....	5.00	7.00	5.00
45	Lower Idler Wheels (2)	....	....	....	....	....	10.00
46	Lower Idler Chain Guide	....	....	....	....	....	4.00
47	Load Chain Guide and Stripper	....	....	....	....	....	4.00
....	Hand Chain, Regular Lift	6.90	9.20	10 15	10 15	10.15	19.60
....	Load Chain, Regular Lift, with hook	24.20	35.25	45.60	54.90	66 90	110.00

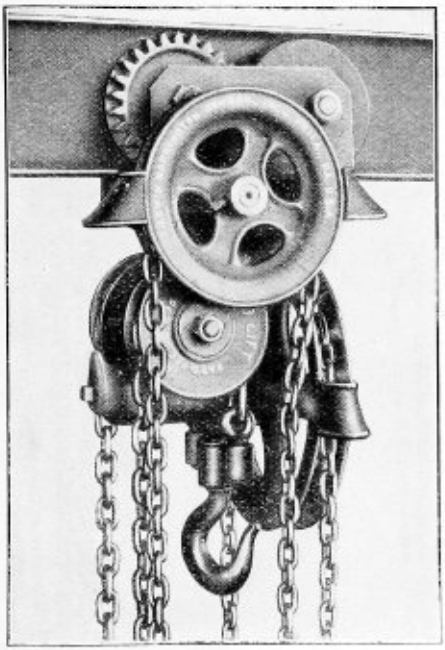
For parts smaller sizes see page 101.

†Old Style Hand Chain Guard as shown on page 100, parts 9 and 13, can be furnished for this model if desired.

NOTE.—In ordering parts, always give number of part, capacity of Hoist, and year of Patent, 1876 or 1894. For 1876 parts see page 100.

COMBINED TRAVELERS WITH HARRINGTON SCREW HOISTS

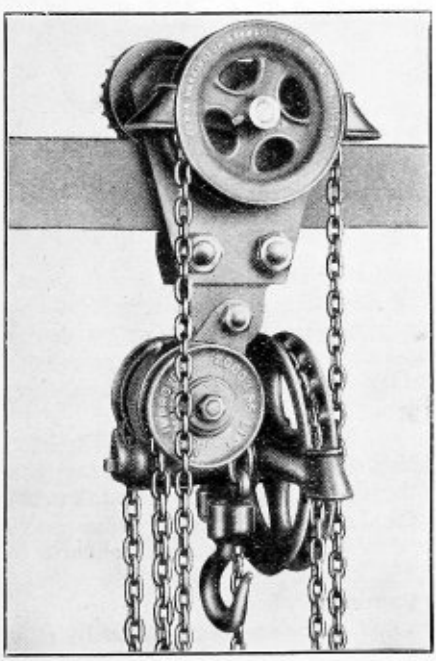
Where head room is limited, also where hoists are not taken down, this type is desirable.



I-BEAM TRAVELERS

Capacity in pounds	Standard Size of I-Beam in inches	Regular Lift in feet	Shortest Distance Beam to Hook in inches*	Price Plain	Price Geared	Price Extra Lift per foot
1,000	5	8	16	$39.00	$51.00	$1 70
2,000	6	8	16	46 00	58 00	2.00
3,000	7	8	18¾	59 00	71 00	2.25
4,000	8	9	20	72 00	85.00	2 50
6,000	9	10	28	102 00	117.00	2.70
8,000	10	10	29	128.00	147.00	2.90
10,000	12	12	33½	183 00	205 00	3.50
12,000	15	12	33¾	235.00	260 00	4.25
16,000	20	12	36¾	280.00	305.00	4.50
20,000	24	12	41	360 00	390 00	4.75

* From under side of I-beam to inside of hook.



FLAT RAIL TRAVELERS

Capacity in pounds	Standard Size of Rail in inches	Regular Lift in feet	Screw			
			Shortest Distance Beam to Hook* in inches	Price Plain	Price Geared	Price Extra Lift per foot
500	3 x ½	8	17½	$33.50	$45.50	$1.50
1,000	3 x ½	8	19¾	36.00	48.00	1.70
2,000	4 x ¾	8	21¾	47.00	58.00	2.00
3,000	4 x ¾	8	23	57.00	68.00	2.25
4,000	4 x ¾	9	26	70.00	81.00	2.50
6,000	6 x 1	10	35	100.00	113.00	2.70
8,000	6 x 1	10	36	120 00	133.00	2.90

* From top of rail to inside of hook.

For Combined Peerless Hoists with Travelers, see page 109.

PEERLESS HOISTS

SPUR GEARED — HIGHEST EFFICIENCY — LIGHT WEIGHT

Showing Different Arrangements of Chains on Various Sizes of Peerless Hoists

The Peerless Hoist embodies the highest requirements of modern labor saving appliances, viz: Strength, light weight, and protection against wear. The high efficiency permits them to be geared to a very fast-lifting speed without increase pull on the hand chain. A child can lower any weight. The light weight is due to the compact design. The hoisting mechanism consists of a balanced train of compound spur gears with accurately cut teeth made from solid drop forged blanks, insuring strength and perfect action. The driving pinion is made of high carboned steel.

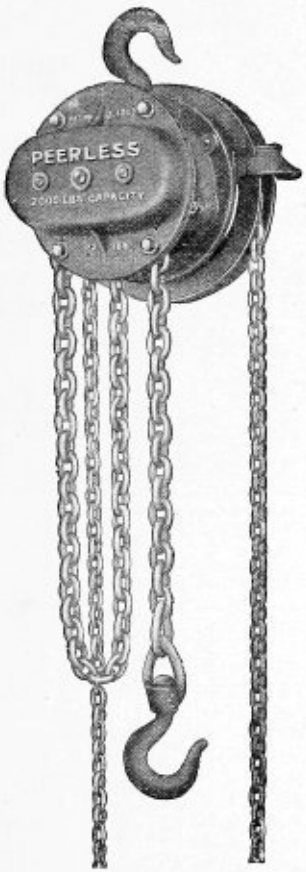
The sustaining mechanism consists of two friction disks, between which is a leather washer. The hand wheel is screwed upon the threaded hub of the inside disk, and in hoisting, clamps both disks tightly together. The parts thus clamped act as one and rotate without friction. The other disk has teeth of a special form cut in its periphery with which is meshed a pinion carried on a swinging arm. In hoisting they revolve noiselessly, but when raising motion ceases, the teeth, unable to revolve in reverse direction, lock in such a manner as to throw the pinion slightly backward until its teeth engage a steel pawl. This forms a positive lock, automatically binding the friction and holding the load securely until it is desired to again raise or lower it.

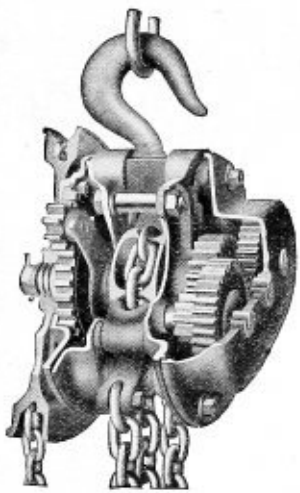
Both the gearing and friction lock are thoroughly protected from dust and climatic conditions by tight covers, making possible the most efficient lubrication.

THE PEERLESS HOIST

Spur Geared

Highest Efficiency. Single Chain to 6,000 Pounds Capacity





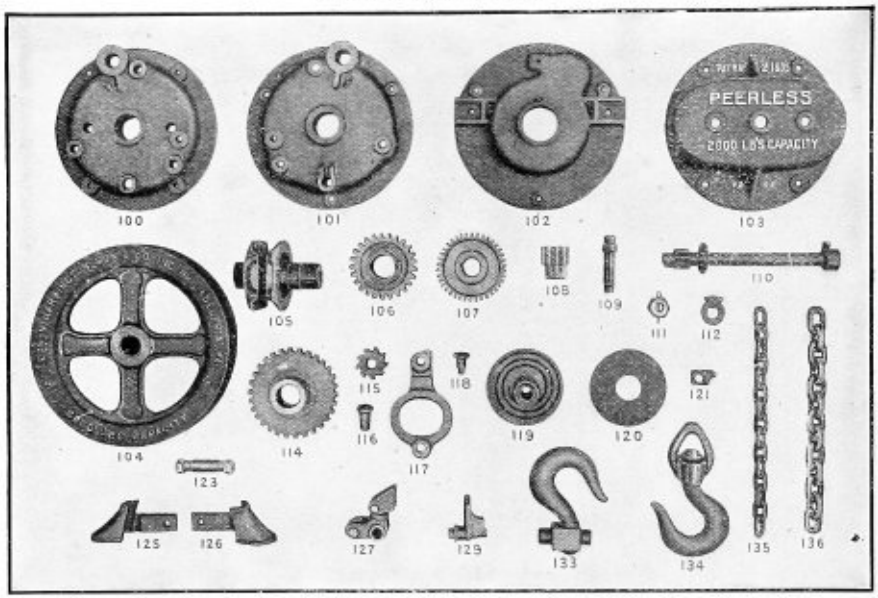
Capacity in pounds	Regular Lift, in feet	Price of Hoist, Regular Lift	Price of Extra Lift per foot	Minimum Distance Between Hooks, in inches	Weight of Hoist, In pounds	Pull on Hand Chain to Lift Full Load, in pounds	Feet of Chain Handled to Lift Load, one foot	Number of Strands of Load Chain
500	8	$30 00	$0.85	13	46	50	14.0	1
1,000	8	35.00	.90	14	52	64	20.3	1
2,000	8	45.00	.95	16	80	81	31.5	1
3,000	8	60.00	1.00	19	112	114	34.5	1
4,000	9	70.00	1.05	22¼	151	124	40.5	1
6,000	10	90.00	1.25	24	226	130	59.0	1
8,000	10	110.00	1.60	29	227	128	81.0	2
10,000	12	140.00	2.00	32	320	112	118.0	2
12,000	12	165.00	2.00	34½	335	134	118.0	2
16,000	12	200.00	2.75	39¾	435	125	177.0	3
20,000	12	240.00	3.20	42	482	181	154.5	3
30,000	12	340 00	4.60	56½	1012	208*	103.0*	4
40,000	12	425.00	6.40	67	1400	186*	154.5*	6

* On each hand chain.

For parts see pages 106 and 107.

PARTS OF PEERLESS HOISTS

500 TO 6,000 POUNDS

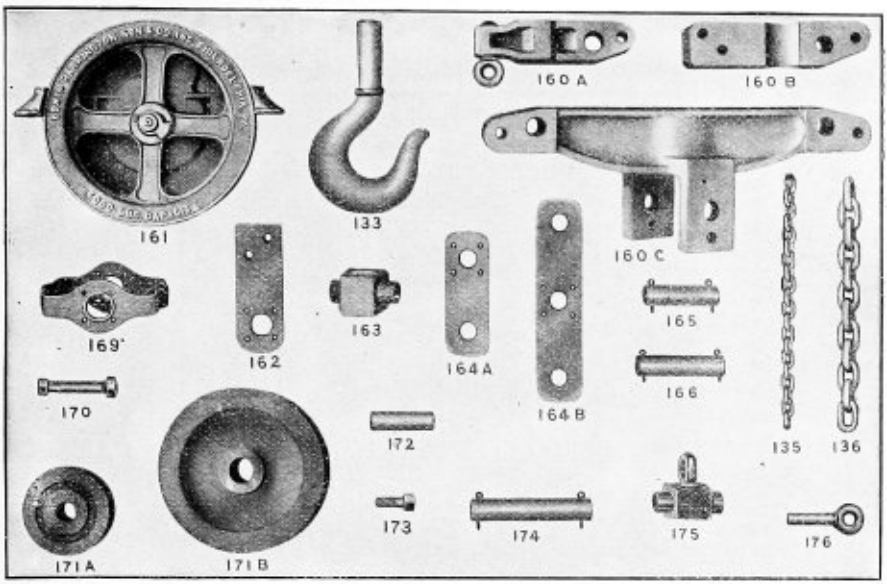


List No.	Name	500	1,000	2,000	3,000	4,000	6,000	8,000	10,000 to 40,000
100	Back Frame	$1 10	$1 50	$2 00	$3 00	$4 00	$5 60	$4 00	$5 60
101	Front Frame	1 10	1 50	2 00	3 00	4 00	5 60	4 00	5 60
102	Front Cover	1 00	1 20	1 70	2 40	3 20	4 40	3 20	4 40
103	Back Cover	1 00	1 20	1 70	2 40	3 20	4 40	3 20	4 40
104	Hand Wheel *	1 00	1 60	2 30	3 00	3 60	5 30	3 60	5 30
105	Load Wheel *	90	1 20	1 90	2 40	2 80	3 80	2 80	3 80
106	Main Gear *	1 30	1 60	2 10	3 60	4 10	5 00	4 10	5 00
107	Intermediate Gear, each *†	80	80	1 00	1 40	1 60	1 80	1 60	1 80
108	Intermediate Pinion, each *	40	40	50	70	80	90	80	90
109	Intermediate Pinion Stud, each *	40	40	50	70	80	1 00	80	1 00
110	Driving Pinion and Shaft, complete*†	2 00	2 70	3 40	4 30	5 10	6 00	5 10	6 00
112	Check Washer *	30	30	40	50	60	70	60	70
114	Ratchet Disc *	1 00	1 00	1 40	1 50	1 70	2 00	1 70	2 00
115	Ratchet Pinion *	40	40	40	40	40	40	40	40
116	Ratchet Pinion Stud *	30	30	30	30	30	30	30	30
117	Ratchet Pinion Carrier Arm *	50	50	50	50	60	70	60	70
118	Ratchet Pinion Carrier Stud *	30	30	30	30	30	30	30	30
119	Friction Disc *	1 20	1 20	2 00	2 80	3 80	4 50	3 80	4 50
120	Leather Washer	40	40	60	70	80	90	80	90
121	Friction Lock and Bolt *	50	50	50	50	50	50	50	50
123	Connecting Stud and Nuts *	40	40	50	70	80	90	80	90
125	Hand Chain Guides, pair	70	80	90	1 30	1 50	1 70	1 50	1 70
127	Load Chain Guide	50	50	60	80	90	1 00	90	1 00
129	Stripper *	30	30	40	60	80	90	80	90
131	Hook only *	80	1 00	1 30	1 70	2 00	2 60	....	....
133	Top Hook and Swivel	1 70	2 00	2 60	3 50	4 10	5 20	....	....
134	Bottom Hook and Swivel *	1 70	2 00	2 60	3 50	4 10	5 20	....	....
135	Hand Chain, per ft.*	25	25	25	25	25	25	....	....
	Hand Chain, complete *	4 25	4 25	4 25	4 50	5 00	5 50	....	....
136	Load Chain, per ft.*	35	40	45	50	55	75	....	....
	Load Chain, complete with Hook *	4 97	5 73	6 80	8 17	9 88	14 20	....	....
175	Brass Washer for Hand Wheel*	30	30	30	30	30	30	30	30

†Parts 107 and 110 must be so specified when wanted for "quick speed" hoists.
*Also used in Army and Navy Type. See page 110.
NOTE.—In ordering Parts always give Number and capacity of Hoist.
For Complete Blocks, see page 105.
For Parts 4 to 40 Ton, see page 107.

PARTS OF PEERLESS HOISTS

8,000 TO 40,000 POUNDS



PRICES OF 8,000 TO 40,000 PEERLESS PARTS

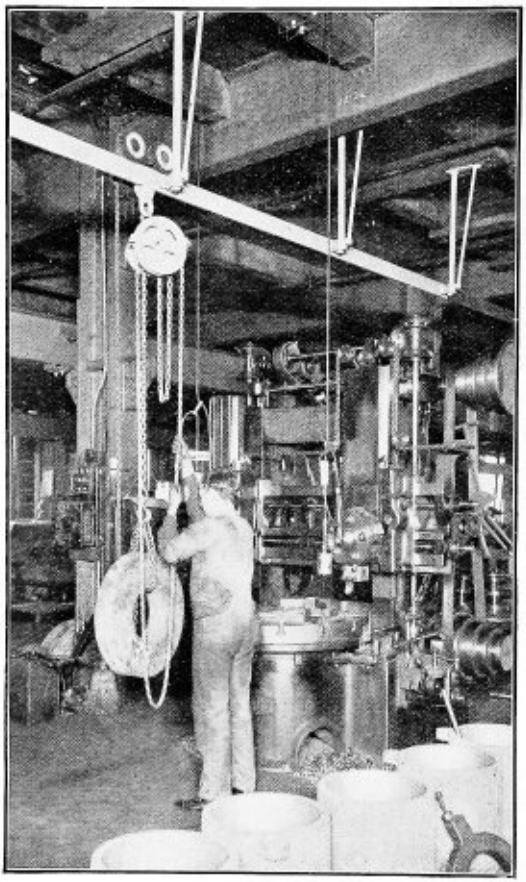
List No.	Name	8,000	10,000	12,000	16,000	20,000	30,000	40,000
	Main Block	$51.00	$65.00	$65.00	$65.00	$65.00	$65.00	$65.00
	Top Yoke, Complete	18.50	23.00	36.00	60.50	77.00	92.20	115.20
133	Top Hook	8.50	10.50	16.50	19.00	27.00	32.00	39.00
160–A	Top Yoke	9.00	17.00	17.00				
160–B	Top Yoke				24.00	30.00		
160–C	Top Yoke						35.00	42.00
162	Side Plates, each				2.50	3.00	4.00	5.00
166	Top Pin and Cotters				2.50	3.00	3.50	4.00
169	Guard Yoke				3.50	4.00	4.50	5.00
170	Side Plate Bolt				.50	.50		
171–A	Top Sheave				4.50	5.50		
171–B	Top Sheave						6.00	6.00
172	Top Yoke Pin	1.00	1.00	1.00	1.00	1.00	1.00	1.00
173	Side Plate Cap Screws						.10	.10
174	Side Plate Pin						1.00	1.00
176	Eye Bolt	1.00	1.00	1.00				
	Bottom Block, Complete	23.00	29.00	35.00	45.00	61.50	73.50	98.50
133	Bottom Hook	8.50	10.50	16.50	19.00	27.00	32.00	39.00
135	Hand Chain, per ft.	.25	.25	.25	.25	.25	.25	.25
136	Load Chain, per ft.	.55	.75	.75	.75	.90	.90	.90
161	Bottom Guard Yoke	2.50	3.50	3.50	3.50	4.00	5.00	5.50
163	Bottom Swivel	2.50	3.00	3.00	4.00	8.00	12.00	20.00
133 / 163	Bottom Hook and Swivel	11.00	13.50	19.50	23.00	35.00	44.00	59.00
164–A	Side Plates, each	2.00	2.50	2.50			5.00	6.00
164–B	Side Plates, each				4.00	4.50		
165	Bottom Sheaves Pin	2.00	2.50	2.50	2.50	3.00	3.50	4.00
171–A	Bottom Sheave	3.50	4.50	4.50	4.50	5.50		
171–B	Bottom Sheave						6.00	6.00
175	Cross Bar				3.00	4.50		
176	Eye Bolt and Nut				1.00	1.00		
	Hand Chain, each, Complete	5.50	6.50	6.50	6.75	6.75	7.00	7.00
	Load Chain, Complete	12.65	20.25	20.25	30.38	36.45	54.00	82.80

For parts of main block, see page 106.

NOTE.—In ordering Parts always give Number and capacity of Hoist.

For Complete Blocks, see page 105.
For Parts 500 to 6,000 lbs., see page 106.

THE QUICK SPEED PEERLESS HOIST



In many cases, it is desirable to lift light loads at a much faster speed than is attainable with the regular gearing. To accomplish this, we recommend the "Quick Speed Peerless," with gears of a higher ratio, which lifts at about double the speed of the regular hoist.

The accompanying cut shows a Quick Speed Hoist in use, serving a mill where the work is too heavy for a man to handle, and where every moment lost in changing jobs means an idle machine.

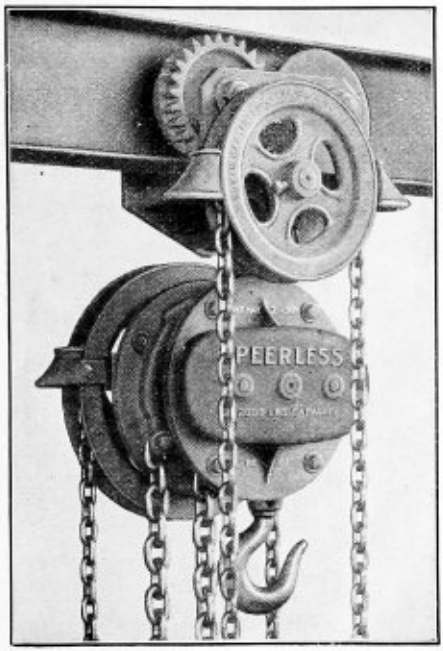
The same gearing as furnished in these hoists can also be put into the Peerless Trolley Hoists (see p. 110), making a very fast and compact block for places allowing little head room.

Capacity in pounds	Regular Lift, in feet	Price of Hoist, Regular Lift	Price of Extra Lift per foot	Minimum Distance between Hooks in inches	Weight of Hoist in pounds	Pull on Hand Chain		Feet of Chain Handled to Lift Load one foot
						To Lift Half Load	To Lift Quarter Load	
500	8	$30.00	$0.85	13	48	47.6	24.5	7.5
1000	8	35.00	.90	14	52	65.9	35.5	10.0
2000	8	45.00	.95	16	80	85.9	47.5	16.8

COMBINED TRAVELERS

With Peerless Hoists

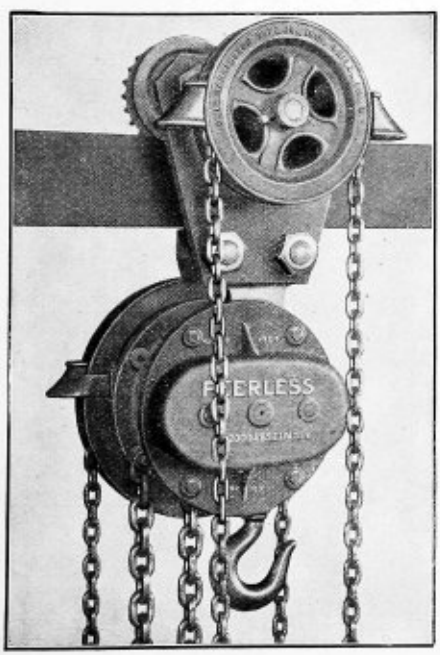
Where head room is limited, also where hoists are not taken down, this type is desirable.



I-BEAM TRAVELERS

Capacity in pounds	Standard Size of I-Beam in inches	Regular Lift in feet	Shortest Distance Beam to Hook, in inches*	Price Plain	Price Geared	Price Extra Lift per foot
1,000	5	8	15¾	$49.00	$61.00	$1.40
2,000	6	8	17¼	61.00	73.00	1.45
3,000	7	8	20	79.00	91.00	1.50
4,000	8	9	23	92.00	105.00	1.55
6,000	9	10	25¼	117.00	132.00	1.75
8,000	10	10	29¾	143.00	162.00	2.10
10,000	12	12	35¼	183.00	205.00	2.50
12,000	15	12	36¼	220.00	245.00	2.50
16,000	20	12	41½	270.00	295.00	3.25
20,000	24	12	43	325.00	355.00	3.70

* From under side of I-Beam to inside of hook.



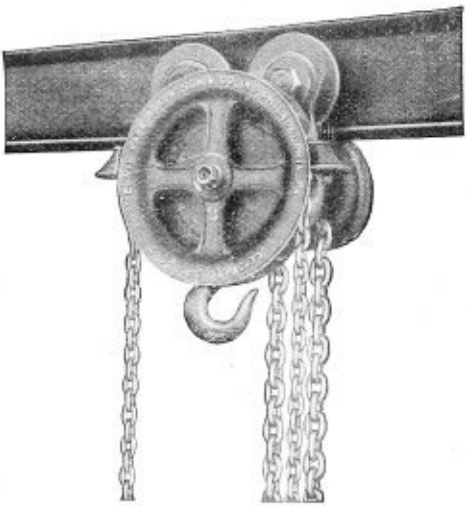
FLAT RAIL TRAVELERS

Capacity in pounds	Standard Size of Rail in inches	Regular Lift in feet	Shortest Distance Beam to Hook in inches*	Price Plain	Price Geared	Price Extra Lift per foot
500	3 x ½	8	17	$41.00	$53.00	$1.35
1,000	3 x ½	8	17¼	46.00	58.00	1.40
2,000	4 x ¾	8	20¼	62.00	73.00	1.45
3,000	4 x ¾	8	23	77.00	88.00	1.50
4,000	4 x ¾	9	26½	90.00	101.00	1.55
6,000	6 x 1	10	29½	115.00	128.00	1.75
8,000	6 x 1	10	34	135.00	148.00	2.10

* From top of rail to inside of hook.

For Screw Hoists with Travelers, see page 103.

PEERLESS TROLLEY HOISTS

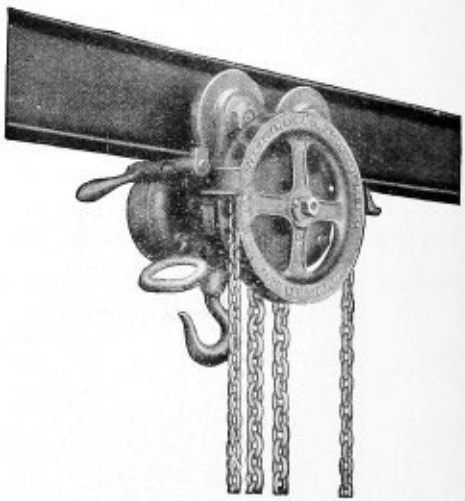


ARMY TYPE

In many cases the available head room is so cramped that the compact Peerless Trolley Hoist can be used to great advantage. It is so designed that the distance from the rail to the hook is even much less than between the hooks on the regular hoist. The frames of the hoist and trolley are integral, and the trolley wheels are equipped with roller bearings.

ARMY TYPE

Capacity in pounds	Regluar Lift in feet	Price of Hoist Regular Lift	Price of Extra Lift per foot	Size of I-beam in inches	Min. Distance bet. Hook and I-beam	Extreme Width of Hoist in inches	Weight of Hoist in pounds
500	8	$45.00	$0.85	5	7¼	8¾	82
1000	8	50 00	90	5	7½	8¾	86
2000	8	65.00	95	6	9½	9¾	121
3000	8	85 00	1.00	7	12	11½	159
4000	9	100 00	1 05	8	14	12¾	210



NAVY TYPE

This hoist is of the same design as the Army Type shown above, but is provided with a drag handle and clamp to lock it at any position on the rail. The above hoists can be equipped with Quick Speed Bearing, described on page 108.

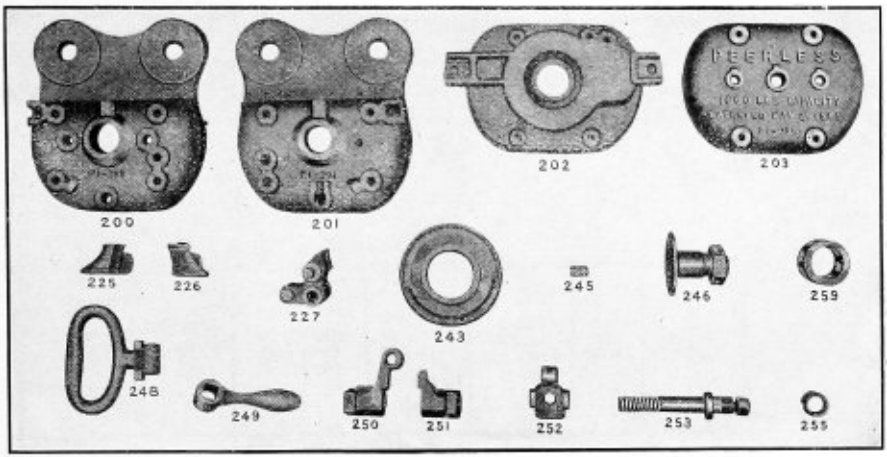
NAVY TYPE

Capacity in pounds	Regular Lift in feet	Price of Hoist Regular Lift	Price of Extra Lift per foot	Size of I-beam in inches	Min. Distance bet. Hook and I-beam	Extreme Width of Hoist in inches	Weight of Hoist in pounds
500	8	$55 00	$0.85	5	7¼	8¾	87
1000	8	60 00	90	5	7½	8¾	91
2000	8	75 00	95	6	9½	9¾	126
3000	8	95 00	1 00	7	12	11½	164
4000	9	110 00	1 05	8	14	12¾	210

For Parts, see page 111.

PARTS OF ARMY AND NAVY PEERLESS

Prices of Parts of Peerless Trolley Hoist



List No.	Name	500	1,000	2,000	3,000	4,000
200	Back Frame	$3.00	$3.00	$5.70	$7.50	$9.00
201	Front Frame	3.00	3.00	5.70	7.50	9.00
202	Front Cover	1.20	1.20	1.70	2.40	3.20
203	Back Cover	1.20	1.20	1.70	2.40	3.20
204	Hand Wheel	1.00	1.60	2.30	3.00	3.60
225, 226	Hand Chain Guide, pair	.70	.80	.90	1.30	1.50
227	Load Chain Guide	.50	.50	.60	.80	.90
243	Trolley Wheel, each	2.00	2.00	2.50	3.50	4.50
245	Anti-Friction Rollers, Set, each	.30	.30	.30	.40	.40
246	Trolley Wheel Stud and Nut, each	1.20	1.20	1.20	1.50	1.50
259	Roller Cages, each	.50	.50	.50	.70	.70
248	Grip Handle	1.10	1.10	1.20	1.30	1.40
249	Lock Handle	1.00	1.00	1.00	1.00	1.00
250, 251	Right and Left Hand Lock, pair	3.50	3.50	3.60	3.80	4.00
252	Lock Support	2.00	2.00	2.10	2.20	2.30
253	Lock Stud and Nut	2.00	2.00	2.10	2.20	2.30
255	Lock Spring	.30	.30	.30	.30	.30

For parts not listed, see those on page 106, marked (*).

For Complete Blocks, see page 110.

DUPLEX BLOCK

Screw-Geared

The Duplex is the popular type of the Y & T Blocks and ranks next in efficiency to their Triplex. It is both light and powerful. The hand chain guides are so placed that the operator can stand clear of the load without wasting energy in dragging the chain through the guides. The safety load chain guides prevent slipping, and the swivel connections prevent fouling of the chain. The bronze worm wheels and steel worms have hardened and ground thrust bearings and run in oil.

Duplex

Capacity in Tons	Price Complete	*Regular Hoist in Feet	Extra Hoist Price per Foot	Minimum Distance between Hooks in Inches	†Reach in Feet and inches	Net Weight in Lbs.	‡Chain Pull		Length of Chain in Regular Hoist	
							Lbs.	Feet	Load feet	Hand feet
½	$ 25.00	8	$1.20	13	9′-1″	43	68	40	18	16
1	30.00	8	1.50	16	9′-4″	57	87	59	18	16
1½	40.00	8	1.75	19	9′-7″	76	94	80	18	16
2	50.00	9	2.00	21	10′-9″	104	115	93	20	18
3	75.00	10	2.20	25	12′-1″	180	132	126	24	21
4	95.00	10	2.40	29	12′-5″	215	142	155	24	21
5	140.00	12	3.00	31	14′-7″	330	145	195	30	26
6	180.00	12	3.75	33	14′-9″	340	145	252	55	26
8	210.00	12	4.00	36	15′-0″	380	160	310	55	26
10	275.00	12	4.25	45	15′-9″	560	160	390	57	28

*Figures denote height in feet which blocks, with regular lengths of chain, will hoist from level on which operator stands. Extra lengths of chain should be ordered when it is desired to hoist higher. No deduction is made for blocks with less than the regular length of chain.

†The "Reach" is the sum of the "Hoist" and the "Minimum Distance between Hooks." When hung at this height to lift the full hoist above the floor the hand chain of Triplex or Duplex blocks hangs down to within 18 inches of the floor.

‡Figures denote the pull in pounds required to lift the full load, and the number of feet of hand chain which must be handled to lift the load one foot.

It is absolutely impossible for the load chains to slip, because these safety guides prevent it.

For prices of parts, see page 113. For Triplex Blocks, see page 114.

PARTS FOR DUPLEX BLOCKS

When Ordering give Name and Number of Parts and also the Size of the Block and its Shop Number, Stamped Near the Top Hook

(ONE-HALF TO FIVE TONS)

(For 5 Tons and Larger Sizes.)

PARTS ½ TO 5 TON

List No.	Name	½ Ton	1 Ton	1½ Ton	2 Ton	3 Ton	3½ Ton	4 Ton	5 Ton
41	Load Chain Guide	$0 40	$0 50	$0 60	$0 70	$1 00	$1 20	$1 40	$1 60
45	Worm and Shaft	3 00	3 50	4 00	4 50	5 00	6 00	7 00	10 00
49	Load Chain Guard	30	40	50	60	70	80	90	1 00
50	Worm Wheel	3 50	4 00	5 00	6 00	7 00	9 00	11 00	15 00
51	Top Hook	1 00	1 40	1 80	2 40	3 00	4 00	5 00	6 00
52	Load Sheave, per pair	1 50	2 00	2 50	3 00	3 50	4 00	4 50	5 00
53	Strippers, per pair	30	40	50	60	70	80	90	1 00
54	Bottom Hook Swivel and Eye Bolts	2 00	2 50	3 00	3 50	4 50	5 00	6 00	8 00
55	Hand Chain Guide	90	1 00	1 30	1 80	2 00	2 40	2 60	2 80
56 & 61	Housing, each half	2 50	3 00	4 00	5 00	6 00	7 00	10 00	15 00
58	Friction Plug	1 20	1 40	1 70	2 00	.....	.....	.....	.....
59	*Hand Wheel (see note below)	1 50*	1 60*	2 50*	3 00*	3 50	4 00	4 50	5 00
60	Friction Plug Cover	30	30	40	50	.....	.....	.....	.....
72	Pinion Shaft	.....	.....	.....	.....	4 00	4 20	4 40	4 60
74	Gear	.....	.....	.....	.....	1 60	1 80	2 00	2 20
91	Friction Plug Cover	.....	.....	.....	.....	50	50	50	50
92	Friction Plug	.....	.....	.....	.....	2 50	3 00	3 50	4 00
..	†Hand Chain, per foot	25†	25†	25†	25†	25	40	40	40
..	Load Chain, per foot	37½	40	42½	45	50	55	55	60

* In ordering Hand Wheels or Hand Chain note number of pockets for chain links in rim of wheel.
† Welded hand chain for old model Blocks 37½ per foot for ½, 1½, and 2 Ton sizes

Parts of Duplex Blocks, 6 to 10 Tons

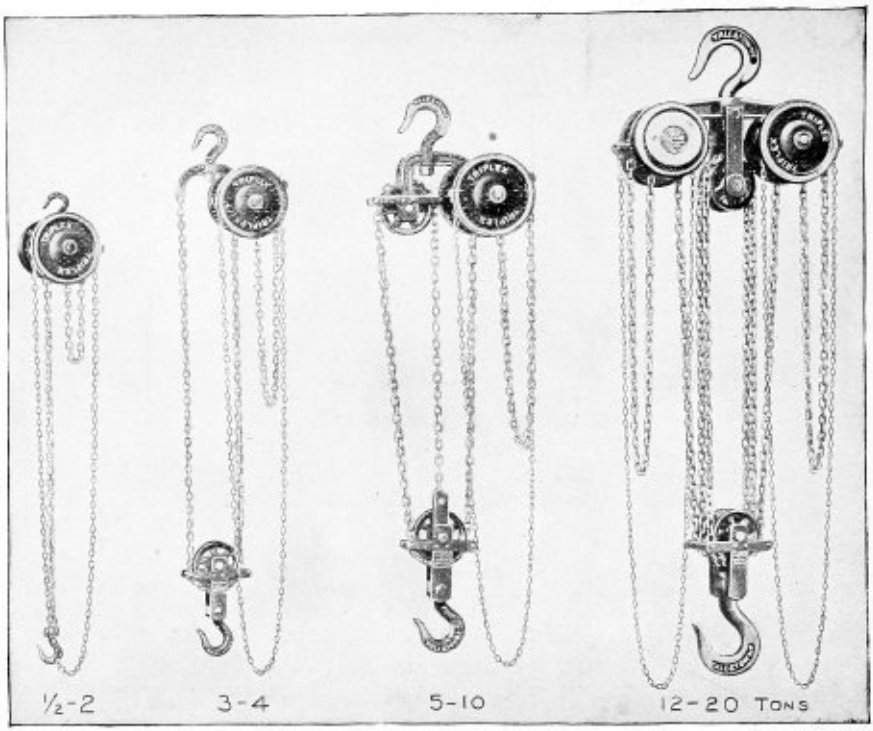
List No.	Name	6 Ton	7 Ton	8 Ton	10 Ton	List No.	Name	6 Ton	7 Ton	8 Ton	10 Ton
41	Load Chain Guide	$1 70	$1 80	$1 90	$2 50	76	Bottom Guides, per pair	$4 50	$5 00	$6 00	$7 00
45	Worm and Shaft	12 00	16 00	18 00	22 00	84	Clevis Pin	50	60	70	1 00
49	Load Chain Guard	1 10	1 20	1 30	1 40	85 & 88	Strippers, per pair	1 50	2 00	2 50	3 50
50	Worm Wheel	16 00	18 00	20 00	25 00	87	Bottom Hook, Swivel and Eye Bolts	12 00	16 00	20 00	25 00
51	Top Hook	7 00	8 00	12 00	15 00		Friction Plug Cover	50	50	60	60
52	Load Sheave, per pair	5 50	6 00	8 00	9 00	91	Friction Plug	4 20	4 40	4 60	5 40
55	Hand Chain Guides	3 00	3 00	3 00	4 00	92	Bottom Sheaves, per pair	3 00	4 00	6 00	7 00
56&61	Housing, each half	16 00	18 00	20 00	30 00	94	Load Chain, per foot	50	55	55	60
59	Hand Wheel	5 00	5 00	6 50	7 00	..	Hand Chain, Welded, per foot	40	40	40	40
72	Pinion Shaft	4 80	5 00	5 20	6 00	..					
74	Gear	2 30	2 40	2 50	3 00	..					

For Complete Blocks, see page 112.

TRIPLEX BLOCK

SPUR GEARED. HIGHEST EFFICIENCY

The Triplex is the best type of Y and T Blocks. It will outlast, outlift in point of economy, ease, and safety, the Duplex.



Showing Different Type of Block

LIST OF BLOCKS

Capacity in tons	Price Complete	Regular Hoist in feet*	Reach in feet and inches	Extra Hoist Price per foot	Minimum Distance between Hooks in ins.	Net Weight in lbs.	Chain Pull in lbs. to Lift Full Load	Feet of Chain Handled to Lift Load one foot	Length of Chain in Regular Hoist	
									Load, feet	Hand, feet
½	$35.00	8	9′-3″	$0.90	15	53	62	21	9	16
1	45.00	8	9′-5″	.95	17	80	82	31	9	16
1½	60.00	8	9′-7½	1.00	19½	124	110	35	9	16
2	70.00	9	11′-0″	1.05	24	188	120	42	10	18
3	90.00	10	12′-8″	1.50	32	200	114	69	24	22
4	110.00	10	13′-1″	1.60	37	290	124	84	25	24
5	140.00	12	15′-9″	2.15	45	380	110	126	44	29
6	165.00	12	15′-10″	2.15	46	390	130	126	44	29
8	200.00	12	16′-3″	2.70	51	470	135	168	58	30
10	240.00	12	16′-9″	3.25	57	570	140	210	72	30
12	300.00	12	16′-9″	4.30	57	800	130†	126†	93	30
16	360.00	12	17′-1″	5.40	61	1,000	135†	168†	117	30
20	425.00	12	18′-5″	6.50	77	1,375	140†	210†	141	30

*Figures denote height in feet which blocks with regular lengths of chain will hoist above level on which operator stands.

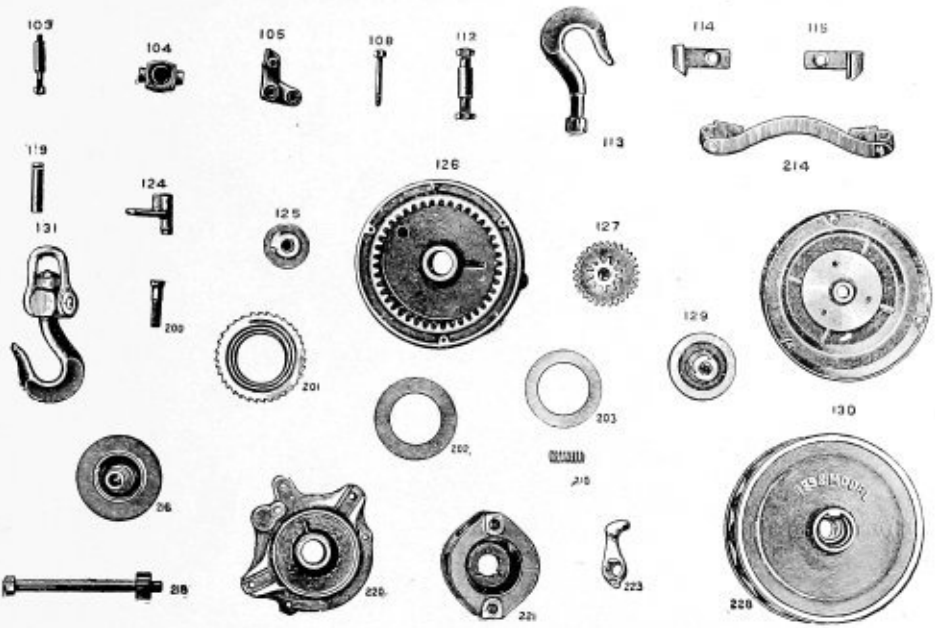
† For each hand chain.

For Prices of Parts, see pages 115, 116, 117.

For Duplex Blocks, see page 112.

PARTS OF 1898 MODEL TRIPLEX BLOCKS

All Blocks Without "1898 Model" Cast on Hand Wheel are Old Style. See Page 116.



List No.	Name	½ ton	1 ton	1½ tons	2 tons	3 tons	4 to 20 tons
103	Small Separator	$0.40	$0.50	$0.60	$0.70	$0.60	$0.70
104	Top Cross Head	1.00	1.40	2.00	2.40	.....	.....
105	Load Chain Guide	.30	.30	.40	.50	.40	.50
108	Load Chain Guide Bolt	.20	.20	.30	.40	.30	.40
112	Large Separator	.60	.70	.80	1.00	.80	1.00
113	Top Hook	1.00	1.40	1.80	2.00	.....	.....
114 115	†Hand Chain Guides, pair	.75	1.20	1.50	1.80	1.50	1.80
119	Gear and Pinion Studs	.40	.60	.70	.80	.70	.80
124	Stripper	.30	.40	.50	.50	.50	.50
125	Check Washer	.40	.50	.70	.90	.70	.90
126	Internal Gear	2.40	3.20	5.00	6.00	5.00	6.00
127	Gear and Pinions	.80	1.10	1.40	1.60	1.40	1.60
129	Load Sheave	1.50	2.00	2.30	2.80	2.30	2.80
130	Gear Cover	1.20	1.50	1.80	2.10	1.80	2.10
131	Lower Swivel Hook	1.50	2.30	3.20	5.50	.....	.....
200	Pawl Stud	.40	.40	.50	.50	.50	.50
201	Ratchet Disc	.80	1.00	1.40	1.50	1.40	1.50
202	Leather Disc	.40	.40	.50	.60	.50	.60
203	Galvanized Iron Disc	.40	.40	.50	.60	.50	.60
210	Pawl Spring	.20	.20	.30	.30	.30	.30
214	†Strap Hand Chain Guide	.75	1.20	1.50	1.80	1.50	1.80
216	Disc Hub	1.80	2.30	3.20	4.20	3.20	4.20
218	Driving Pinion	3.00	4.00	5.00	6.00	5.00	6.00
220	Ratchet Case	2.50	3.50	4.50	5.50	4.50	5.50
221	Pinion Cage	1.60	2.10	3.20	4.20	3.20	4.20
223	Pawl	.20	.20	.30	.30	.30	.30
228	Hand Wheel	1.80	2.30	3.00	3.60	3.00	3.60
...	*Load Chain, per foot	.40	.45	.50	.55	.50	.55
...	Hand Chain, Steel, per foot	.25	.25	.25	.25	.25	.25

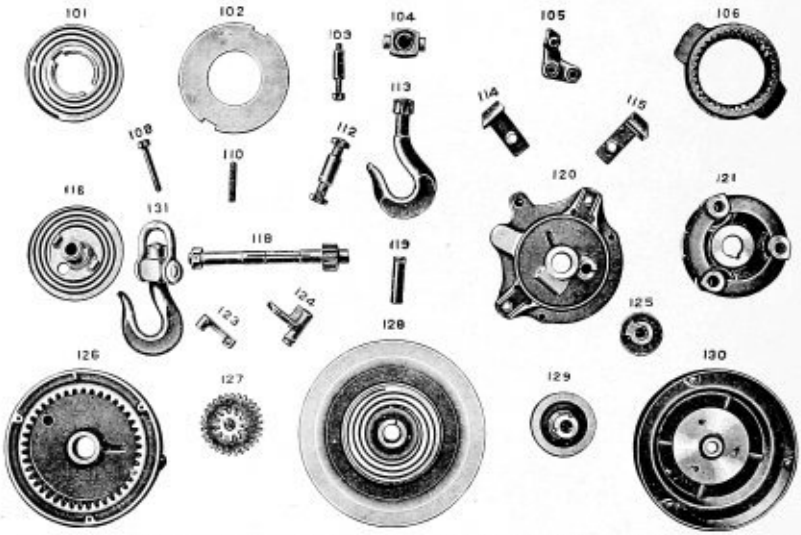
* In ordering Load Chain specify whether or not hook is required.

† The new style Strap Hand Chain Guide fits in the place of No. 114 and No. 115 and may be substituted if desired.

For Complete Blocks, see page 114. For Old Model and balance parts, see page 116 and 117.

PARTS OF "OLD MODEL" TRIPLEX BLOCKS

Block with 1898 Model cast on Hand Wheel, are New Model. See page 115



When ordering give Name and Number of Part and also Size of Block and the shop number stamped on the cross head near the top hook

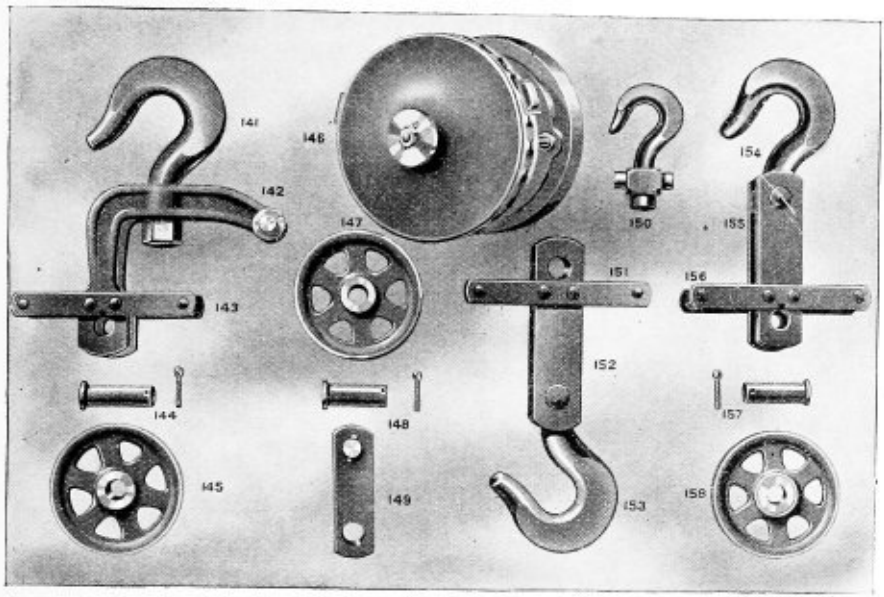
BLOCKS "OLD MODEL"

List No.	Name	½ Ton	1 Ton	1½ Tons	2 Tons	3 Tons	4 to 20 Tons
101	Intermediate Disc	$0.80	$1.00	$1.40	$1.50	$1.40	$1.50
102	Brass Discs, per pair	2.00	2.50	2.80	3.00	2.80	3.00
103	Small Separators	.40	.50	.60	.70	.60	.70
104	Top Cross Head	1.00	1.40	2.00	2.40	.....	.....
105	Load Chain Guide	.30	.30	.40	.50	.40	.50
106	Ratchet Dog	.50	.60	.90	1.20	.90	1.20
108	Load Chain Guide Bolt	.20	.20	.30	.40	.30	.40
110	Pawl Spring	.20	.20	.30	.30	.30	.30
112	Large Separator	.60	.70	.80	1.00	.80	1.00
113	Top Hook	1.00	1.40	1.80	2.00	.....	....
114 115	Hand Chain Guides, pair	.75	1.20	1.50	1.80	1.50	1.80
116	Disc Hub	1.80	2.30	3.20	4.20	3.20	4.20
118	Driving Pinion	3.00	4.00	5.00	6.00	5.00	6.00
119	Gear and Pinion Studs, each	.40	.60	.70	.80	.70	.80
120	Ratchet Case	2.50	3.50	4.50	5.50	4.50	5.50
121*	Pinion Cage	1.60	2.10	3.20	4.20	3.20	4.20
123	Pawl	.20	.20	.30	.30	.30	.30
124	Stripper	.30	.40	.50	.50	.50	.50
125	Check Washer	.40	.50	.70	.90	.70	.90
126	Internal Gear	2.40	3.20	5.00	6.00	5.00	6.00
127	Gear and Pinions, each	.80	1.10	1.40	1.60	1.40	1.60
128	Hand Wheel	1.80	2.30	3.00	3.60	3.00	3.60
129	Load Sheave	1.50	2.00	2.30	2.80	2.30	2.80
130	Gear Cover	1.20	1.50	1.80	2.10	1.80	2.10
131	Lower Swivel Hook	1.50	2.30	3.20	5.50	.....	.....
	†Load Chain, per foot	.40	.45	.50	.55	.50	.55
	Hand Chain, per foot	.37½	.37½	.37½	.37½	.37½	.37½

* Part 221, page 115 is always substituted, discarding one gear and balancing better.
† In ordering Load Chain specify whether or not Hook is required.
For Complete Blocks, see page 114
For parts 1898, New Model and balance parts, see pages 115 and 117.

PARTS OF TRIPLEX BLOCKS 3 TO 10 TONS

For parts of Main Blocks, see page 115.



TOP BLOCK

List No.	Name	3 Ton	4 Ton	5 Ton	6 Ton	8 Ton	10 Ton
141	Top Hook	$3.00	$5.00	$6.00	$7.00	$12.00	$15.00
142	Top Yoke	11.00	15.00	18.00	28.00	35.00	42.00
143	Top Guard and Guides	.....	.....	7.00	9.00	12.00	15.00
144	Top Pin	.....	.....	1.00	1.50	2.00	2.50
145	Top Sheaves	.....	.....	3.00	4.50	5.00	5.50

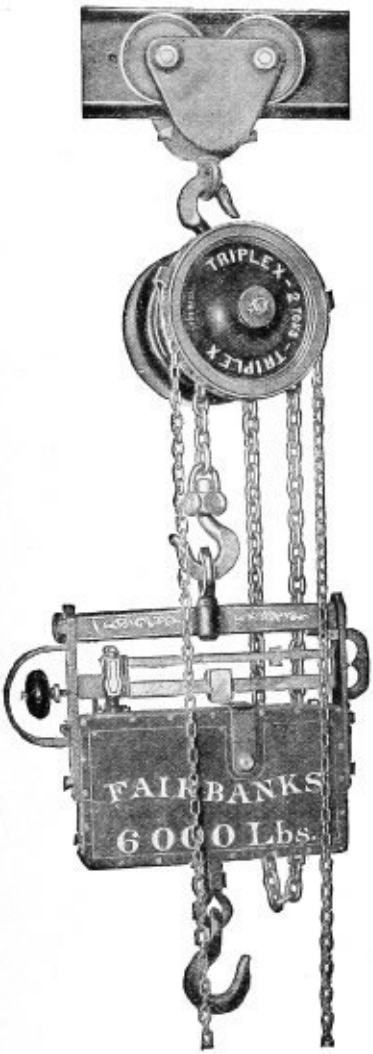
MAIN BLOCK

146	Main Block, A or B	$47.50	$55.00	$55.00	$55.00	$55.00	$55.00
150	Top Yoke and Crosshead for Main Block, Type B	3.80	4.40	4.40	4.40	4.40	4.40

BOTTOM BLOCK

147	Bottom Sheave	$3.00	$4.50	$5.00	$6.00	$6.00	$7.00
148	Bottom Pin	.80	1.30	1.50	2.00	2.50	3.00
149	Becket Straps	.....	.....	4.00	6.00	.....	8.00
151	Bottom Guards and Guides	3.50	4.00	5.00	7.00	8.00	10.00
152	Bottom Side Plates and Crosshead	5.00	6.00	9.00	12.00	15.00	25.00
153	Bottom Hook	3.00	5.00	6.00	7.00	12.00	15.00

For Complete Blocks, see page 114.
For other parts, see pages 115 and 116



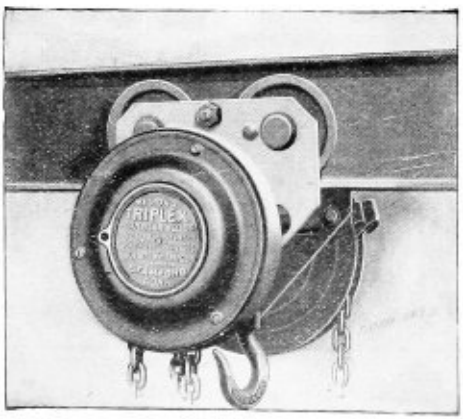
TRIPLEX BLOCKS

Complete with Fairbank's Suspension Scale

This combination is designed to weigh materials as they are being hoisted and transferred, thereby saving the time and labor of handling twice. It is especially adapted for use in iron and steel mills, foundries, shipyards, in shipping rooms, in docks, railway platforms, on ships, canal boats, in warehouses, etc.

Capacity of Scale in Tons	Price of Scale and Triplex Block	Price of Scale only	Head Room Scale only	Weight of Scale only	Regular Hoist for Blocks	Price per Foot Extra Hoist for Block
½	$115.00	$80 00	28 in.	70 lbs.	8 ft.	$0.90
1	135.00	90.00	31 "	125 "	8 "	.95
1½	180.00	120.00	32 "	150 "	8 "	1.00
2	210.00	140.00	32 "	160 "	9 "	1.05
3	270.00	180.00	34 "	220 "	10 "	1.50
4	330.00	220.00	36 "	240 "	10 "	1.60
5	400.00	260.00	36 "	260 "	12 "	2.15
6	465.00	300.00	44 "	420 "	12 "	2.15
8	500 00	300.00	44 "	420 "	12 "	2.70
10	570.00	330.00	44 "	430 "	12 "	3.25
12	660.00	360.00	44 "	450 "	12 "	4.30
16	775.00	415.00	45 "	600 "	12 "	5.40
20	915.00	490 00	44 "	700 "	12 "	6.50

The 16 and 20 ton scales have an eye instead of a bottom hook.



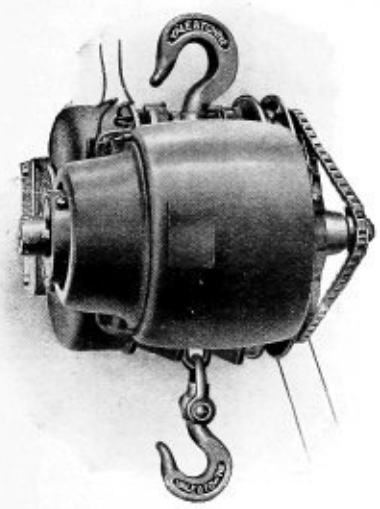
THE TRIPLEX TROLLEY BLOCK

This consists of a Triplex Block combined with a trolley in compact form, and takes up no more space than that ordinarily required for the track and trolley only.

Capacity in Tons	Price Complete	*Hoist in Feet	Price of Extra Hoist per Foot	Size of I-Beam	Minimum Distance between Hook and I-Beam	Extreme Width	Net Weight in lbs.
½	$70 00	8	$0.90	5 in.	8½ in.	12¾ in.	105
1	85.00	8	.95	6 "	12½ "	14 "	168
2	135.00	9	1.05	8 "	16½ "	19 "	2-0

* The Hoist is the travel of hook from the floor to the highest point. The greatest height to the bottom of the I-beam for which this hoist is suitable is the sum of the "hoist" and the minimum distance between Hook and I-beam; at this height the hand chain hangs down within 18 inches of the floor.

ELECTRIC TRIPLEX HOIST

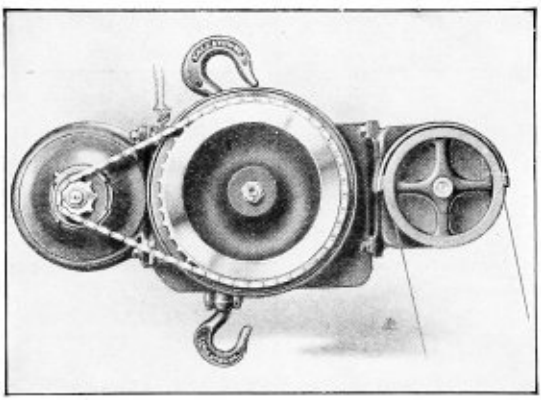


This Hoist solves the problem of short, frequent lifts of from 50 to 2,000 pounds. The hoist is light, compact and simple. It may be hooked to any overhead support and requires little head-room.

For serving machine tools, running on trolley tracks, attaching to small traveling Cranes, lashing to sheer poles, or temporary rigs, this Hoist takes the place of a Chain Block at a moderate additional cost, and gives from five to ten times the speed.

The Hoist consists of the regular parts of the 2-ton Triplex Block, geared to a motor. It is equipped with a hand wheel, so that when power is not available it may be operated by a hand chain, the same as a Chain Block.

The working parts are interchangeable with the regular 2-ton Triplex Block, making the question of repairs and renewal of gear parts a simple and inexpensive matter.



The motor is of the regular series wound type, ruggedly constructed, and suitable for the varying loads and speeds in hoisting work. The power is transmitted through a sprocket chain and balanced train of spur gearing, insuring a very high efficiency and consequent satisfactory speeds at a minimum current consumption. The load is sustained positively by a Weston brake, with silent pawl.

The installation involves simply hooking up, and attaching two wires for current. The controller is operated by two pendant cords. The lifting speeds are from 12 to 30 feet per minute.

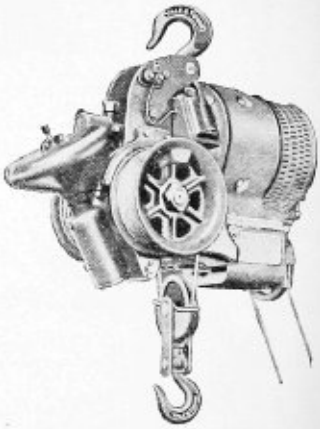
10-ft. lift..... $300.00

Any length lift at a slight additional cost.

ELECTRIC HOISTS

The efficient handling system does not require a crane to neglect heavy work and hurry across the shop to take care of some small lift. The practical equipment includes electric cranes for heavy loads, electric hoists for constant lifting in serving machines or assembling, and small electric hoists or chain blocks for conveying small pieces, in all stages of manufacture.

All parts are enclosed as protection against heat, dust and moisture. Safety receives the first consideration, next simplicity and durability.



One and Two Ton Model

Capacity in Tons	Nominal H. P. of Motors	Speed, Feed per Minute Loaded Light		Regular Lift* feet	Minimum Distance between Hooks, inches	Weight pounds	Price 10 ft. Lift
1	3	20	25	10	40	640	$475.00
2	3	15	25	10	40	640	475.00

*Extra Lift: Long drums for lift up to 45 feet, $25.00 extra.

Foundry Controller: Special graduated speed controllers (five hoisting and four lowering speeds), $75.00 extra.

Capacity in Tons	Nominal H. P. of Motors	Speed, Feed per Minute Loaded Light		Regular Lift* feet	Minimum Distance between Hooks, inches	Weight pounds	Price 10 ft. Lift
4	3	7	14	10	53	820	$485.00

*Extra Lift: Long drums for lifts up to 22 feet, $25.00 extra.

Foundry Controller: Special graduated speed controllers (five hoisting and four lowering speeds), $75.00 extra.

Capacity in Tons	Nominal H. P. of Motors	Speed, Feed per Minute Loaded Light		Regular Lift* feet	Minimum Distance between Hooks, inches	Weight pounds	Price 10 ft. Lift
6	3	5	9	10	62	70	$500.00

*Extra Lift: Long drums for lifts up to 15 feet maximum, $40.00 extra.

Foundry Controller: Special graduated speed controllers (five hoisting and four lowering speeds), $75.00 extra.

Capacity in Tons	Nominal H. P. of Motors	Speed, Feed per Minute Loaded Light		Regular Lift* feet	Minimum Distance between Hooks, inches	Weight pounds	Price 10 ft. Lift
5	7	15	25	10	61	1560	$900.00

*Extra Lift: Long drums for lift up to 45 feet, $50.00 extra.

Foundry Controller: Special graduated speed controller (five hoisting and four lowering speeds), $75.00 extra.

"CYCLONE" "HIGH SPEED" CHAIN HOIST

WITH SELF-LUBRICATING BEARINGS

Front View

Capacity	Price Complete	Height of Lift †	Extra Chain per Foot of Lift	Weight Complete with Chains	Chain Pull to Lift Full Load	Feet of Chain Handled to Lift Load One Foot	Shortest Distance between Hooks
½ ton	$35.00	8 ft.	$0.90	62 lbs.	63 lbs.	19 ft.	15 in.
1 "	45.00	8 "	.95	85 "	85 "	29½ "	18 "
1½ "	60.00	8 "	1.00	107 "	103 "	35 "	24 "
2 "	70.00	9 "	1.05	133 "	126 "	39½ "	26 "
3 "	90.00	10 "	1.50	195 "	115 "	69 "	31 "
4 "	110.00	10 "	1.60	250 "	115 "	91 "	36 "
5 "	140.00	12 "	2.10	386 "	104 "	123 "	40 "
6 "	165.00	12 "	2.10	402 "	100 "	140 "	42 "
8 "	200.00	12 "	2.70	464 "	130 "	159 "	45 "
10 "	240.00	12 "	3.25	610 "	129 "	191 "	48 "
12 "	300.00	12 "	3.30	647 "	150 "	135 "	51 "
16 "	360.00	12 "	3.80	817 "	192 "	231 "	57 "
20 "	425.00	12 "	6.50	1,216 "	190 "	299 " / 191 "	59 "

Back View

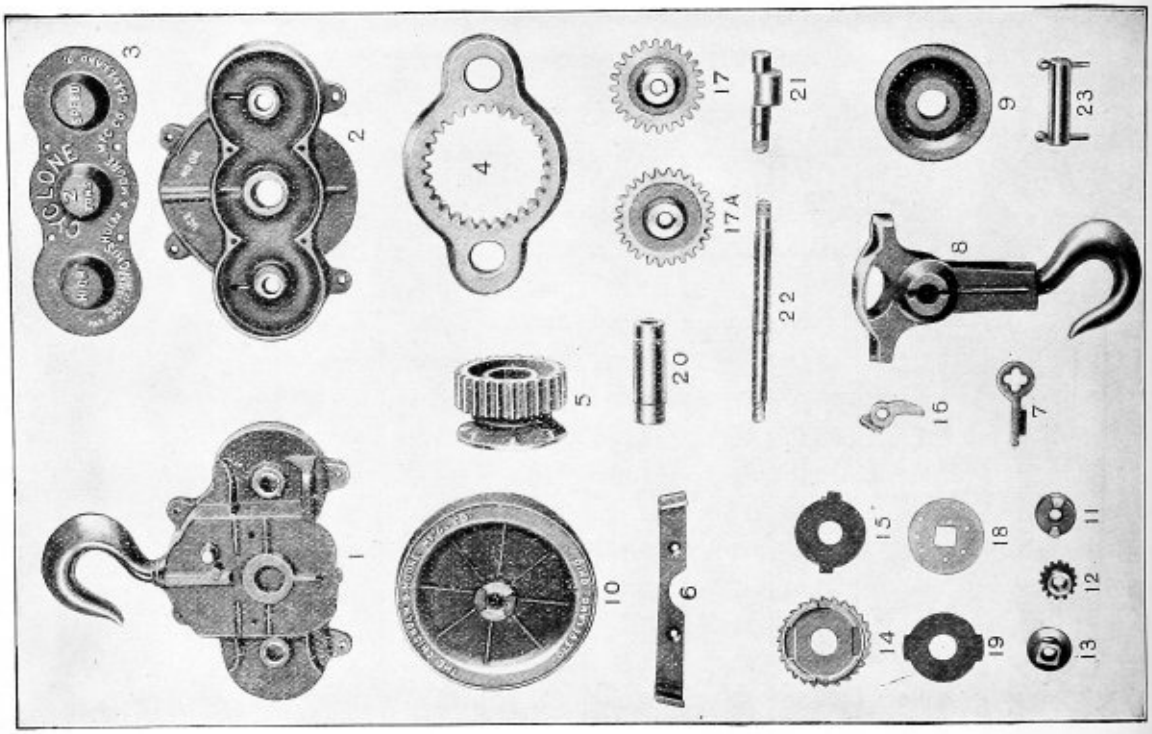
†Figures in third column denote approximate height, which blocks, with regular lengths of chain, will lift from level on which operator stands.

☞For every additional foot of lift desired, two feet extra of both main and hand chain will be necessary.

The lift wheel, that is, the sprocket wheel which carries the lift chain, is cast in one piece with the spur wheel that drives it. This double wheel turns freely upon a hollow shaft rigidly supported at both ends in the frame. The spur wheel is encircled by a yoke having internal teeth meshing into the spur wheel teeth and driven with a gyrating movement about it by two eccentrics placed diametrically opposite. The hand wheel shaft passes through the hollow main shaft carrying at the further end a pinion which drives two spur wheels, one on each of the two eccentric shafts.

For parts, see page 122.

PARTS OF "CYCLONE HIGH SPEED" CHAIN HOIST

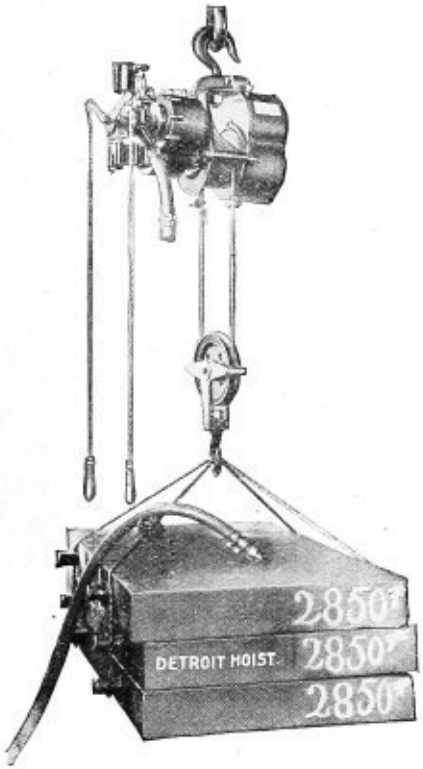


IN ORDERING SPECIFY BY NUMBER AND GIVE CAPACITY OF HOIST

	Size of Block	½	1	1½	2	3	4	5	6	8	10	12	16
1	Frame, Front with Hook	$6.00	$7.50	$10.00	$11.50	$15.00	$16.00	$18.00	$18.00	$20.00	$23.00	$25.00	$30.00
2	Frame Back	4.80	6.00	8.00	9.50	12.00	13.00	15.00	15.00	17.00	19.00	21.00	22.00
3	Gear Cover	.60	.75	1.00	1.20	1.50	1.50	1.75	1.75	1.75	2.00	2.25	2.25
4	Yoke	3.60	4.50	6.00	7.00	9.00	10.00	11.00	11.00	12.00	13.00	14.00	16.00
5	Lift Wheel	3.00	3.75	5.00	5.80	7.50	10.00	12.00	12.00	15.00	17.00	18.00	20.00
6	Chain Guide	.30	.40	.50	.50	.60	.60	.75	1.00	1.00	1.00	1.00	1.00
7	Chain Stripper	.30	.40	.50	.50	.60	.60	.65	.65	.70	.75	.75	.75
8	Lower Frame with Hook	1.75	2.25	3.00	3.50	4.50	5.00	5.50	6.00	7.50	10.00	11.00	16.00
9	Lower Sheave	.60	.75	1.00	1.20	1.50	2.00	2.25	2.75	3.25	4.00	4.00	5.00
10	Hand Wheel	1.50	2.00	2.25	2.75	3.00	3.00	4.00	6.00	6.00	6.00	6.00	6.00
11	Clutch	.25	.25	.25	.25	.30	.30	.30	.30	.35	.35	.35	.35
12	Clutch Nut	.25	.25	.25	.25	.30	.30	.30	.30	.35	.35	.35	.35
13	Plug	1.00	1.00	1.00	1.00	1.25	1.25	1.25	1.25	1.50	1.50	1.50	1.50
14	Cup	.50	.50	.50	.50	.60	.60	.60	.60	.90	.90	.90	.90
15	Plate	.25	.25	.25	.25	.30	.30	.30	.30	.35	.35	.35	.35
16	Pawl	.25	.25	.25	.25	.30	.30	.30	.30	.50	.50	.50	.50
17	Center Pinion	1.00	1.10	1.25	1.35	1.50	1.75	2.00	2.00	2.00	2.25	2.50	2.50
17A	Outer Pinion	1.00	1.10	1.25	1.35	1.50	1.75	2.50	2.50	2.50	2.75	3.00	3.00
17B	Idler Pinion									1.50	1.50	1.75	1.75
18	Fibre Washer	.25	.25	.25	.25	.30	.30	.30	.30	.35	.35	.35	.35
19	Steel Friction Washer	.25	.25	.25	.25	.30	.30	.30	.30	.35	.35	.35	.35
20	Hollow Shaft	1.00	1.25	1.50	1.75	2.25	2.50	4.00	4.00	5.00	5.75	6.50	7.50
21	Eccentric	1.25	1.50	2.00	2.00	2.25	2.35	2.50	2.50	2.75	3.00	3.25	3.50
22	Hand Wheel Shaft	.60	.75	1.00	1.25	1.30	1.40	1.50	1.50	1.60	1.75	1.90	2.00
23	Lower Sheave Pin	.25	.25	.30	.30	.35	.40	.45	.50	.65	.75	.85	1.00
	Hand Chain, per ft.	.25	.25	.25	.25	.25	.25	.25	.25	.40	.40	.40	.40
	Lift Chain, per ft.	.40	.44	.48	.52	.60	.70	.80	.80	1.00	1.25	1.25	1.50

For Complete Block, see page 121.

PNEUMATIC GEARED HOISTS



These hoists are made for handling loads up to 10 tons, with the least possible consumption of air. They will hold the load in case of leakage or break in the hose.

All capacities based on 80 lb. pressure.

Standard Lifts are given in table. Special can be made up to 25 feet.

Always specify height it is wanted to lift.

Size No.	Capacity tons	Height Lift feet	Extra Rope Lift per foot	Speed of Lift per Minute feet	Shortest Distance between Hooks, inches	Weight pounds	Each
1	1	10	80 10	35	30	215	$180.00
2	1½	10	.20	22	38	250	210.00
3	2	10	.25	16	38	250	210.00
4	3	10	.30	11	38	275	250.00
4½	4	10	.30	10	38	325	275.00
5	5	12	.45	10	50	565	300.00
6	6	12		9	50	720	350.00
7	7	12	.60	8	55	925	450.00
	8	12					
8	9	12	.75	6	55	1000	500.00
	10	12					

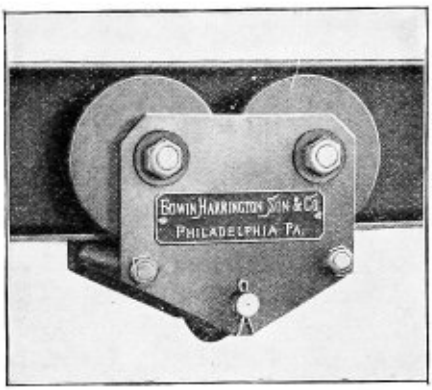
I-BEAM TRAVELERS

To Run on the Lower Flange

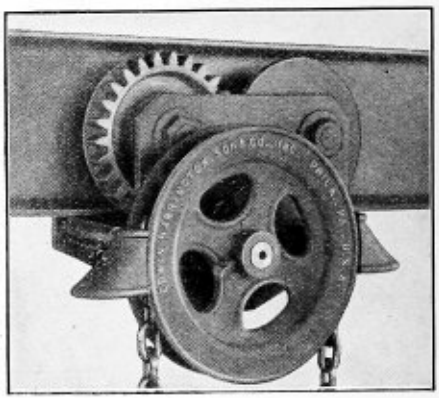
The steel side plates give a maximum strength and at the same time allow light weight, saving of space, and flexibility.

The diameter of the wheels is made as large as the size of the beams used in general practice will allow. They are equipped with steel bushings and roller bearings, and the Geared Travelers are driven on both sides of the beam to prevent friction against the flanges.

Both Plain and Geared Travelers can be widened to suit beams larger than standard, but will be sent regular unless otherwise ordered. Clearance dimensions given on request.



Plain



Geared

PRICE LIST OF I-BEAM TRAVELERS

Capacity in pounds	Standrad Size of I-Beam in inches	Smallest I-Beam Traveler Will Fit	Price of Traveler		Height of Beam from Floor for Regular Hand Chain*	Price of Extra Hand Chain per foot Height	Weight in Lbs.	
			Plain	Geared			Plain	Geared
1,000	5	5	$14 00	$26 00	9′4″	$0.50	35	50
2,000	6	6	16 00	28.00	9′6″	.50	43	57
3,000	7	7	19.00	31.00	9′9″	.50	67	84
4,000	8	8	22.00	35.00	11′0″	.50	75	91
6,000	9	9	27.00	42 00	12′3″	.50	111	127
8,000	10	9	33.00	52.00	12′8″	.50	116	127
10,000	12	10	43.00	65.00	15′0″	.50	163	190
12.000	15	12	55.00	80.00	15′2″	.50	209	234
16,000	20	15	70.00	95.00	15′8″	.50	350	400
20,000	24	15	85.00	115.00	15′10″	.50	370	420

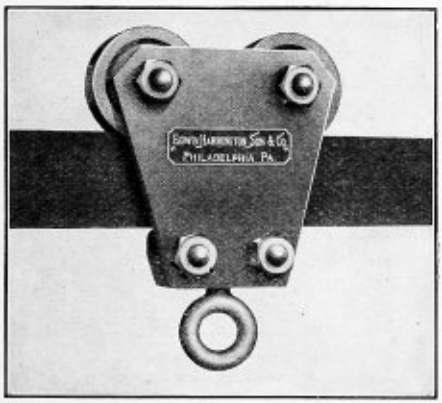
*Height to bottom of beam

FLAT RAIL TRAVELERS

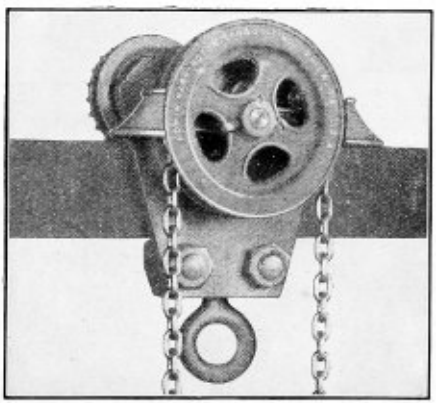
The steel plate travelers for flat rail are often more desirable because of the ease of erecting and making curves in the track.

The side plate is made sufficiently heavy to resist bending, and good clearance is allowed for the foot of the hanger. The size of the wheels is as large as ordinary head room will allow, and they all have steel bushings and roller bearings.

In the geared Traveler, both wheels act as drivers, to give the greatest tractive force. They are all made to take apart for ease in putting on the rail. Clearance dimensions, given on request.



Plain



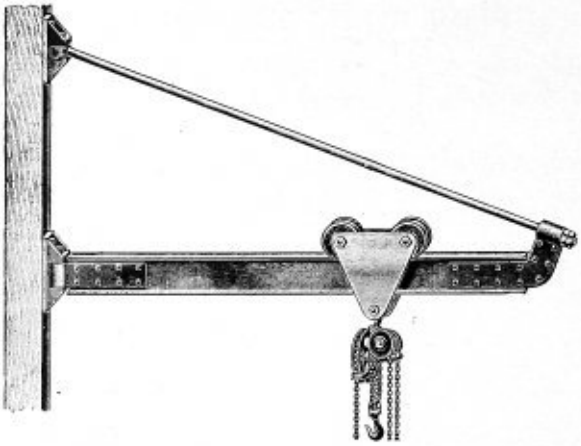
Geared

PRICE LIST OF FLAT RAIL TRAVELERS

Capacity in pounds	Standard Size of Rail in inches	Greatest Distance between Hangers in feet	Price of Traveler		Height of Rail from Floor for Regular Hand Chain*	Price of Extra Hand Chain per ft. Height	Weight in Pounds	
			Plain	Geared			Plain	Geared
500	3″x½″	6	$11.00	$23.00	9′ 8″	$0.50	26	41
1,000	3″x½″	5	11.00	23.00	9′ 9″	.50	26	41
2,000	4″x¾″	6	17.00	28.00	10′ 2″	.50	40	55
3,000	4″x¾″	5	17.00	28.00	10′ 5″	.50	40	55
4,000	4″x¾″	4	20.00	31.00	11′ 9″	.50	60	77
6,000	6″x1″	6	25.00	38.00	13′ 1″	.50	78	97
8,000	6″x1″	5	25.00	38.00	13′ 6″	.50	78	97

* Height to top of rail.

WALL OR POST CRANE



No.	Capacity in tons	Size of Beam Inches	Working Radius	Distance from Wall to Extreme Point	Price with Ball-bearing Trolley without Hoist	Price for Each Additional Foot in Length of Beam
6170	¼	4	11 ft. 7 in.	13 ft. 4 in.	$51.00	$0.70
6171	½	5	11 " 6 "	13 " 5 "	62.00	.90
6172	1	6	11 " 5 "	13 " 6 "	74.00	1.10
6173	1½	7	11 " 4 "	13 " 7 "	87.00	1.35
6174	2	8	11 " 2 "	13 " 8 "	102.00	1.60
6175	3	9	11 "	13 " 9 "	117.00	1.90
6176	4	10	10 " 10 "	13 " 10 "	136.00	2.25
6177	5	12	10 " 9 "	13 " 11 "	160.00	2.60

SIMPLEX PORTABLE CRANE AND HOIST

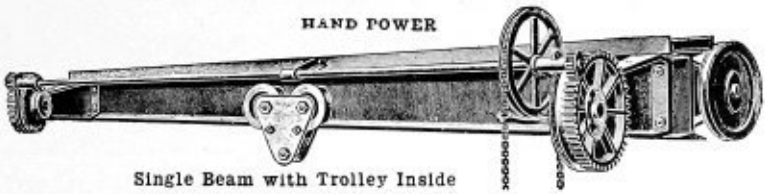
One man can lift two tons and move it to any part of the works.

Attention is called to the compactness of design of this machine, which readily fits it for all out-of-the-way corners of your factory.

No.	Capacity, tons	Price	Height of Crane	Height of Hoist	Overhang	Weight Pounds	Width of Bed Outside	Length of Bed	Height of Bed
90	1	$100.00	5 ft. 4½ in.	4 ft. 3 in.	2 ft. 1¼ in.	600	2 ft. 5 in.	2 ft. 11 in.	11½ in.
91	1½	100.00	6 " 4½ "	5 " 3 "	2 " 4½ "	665	2 " 8 "	3 " 2 "	12 "
91L	1½	100.00	6 " 4½ "	5 " 3 "	2 " 4½ "	660	2 " 8 "	3 " 7 "	6⅜ "
92	2	112.50	7 " 10 "	6 " 8 "	2 " 7½ "	790	2 " 10 "	3 " 5 "	12 "
93	2	112.50	7 " 10 "	6 " 8 "	2 " 7½ "	785	3 " 3 "	3 " 10 "	6⅜ "
94	2½	125.00	8 " 4 "	7 " 3 "	2 " 8½ "	1000	3 " 2 "	3 " 10 "	12 "
95	2½	125.00	8 " 4 "	7 " 3 "	2 " 8½ "	1000	3 " 8 "	3 " 10 "	6½ "
96	3	150.00	9 " 5 "	8 " 4 "	2 " 11 "	1150	4 " 2½ "	3 " 11 "	12 "
97	3	175.00	9 " 5 "	8 " 4 "	3 " 11 "	1300	4 " 2½ "	4 " 11 "	12 "

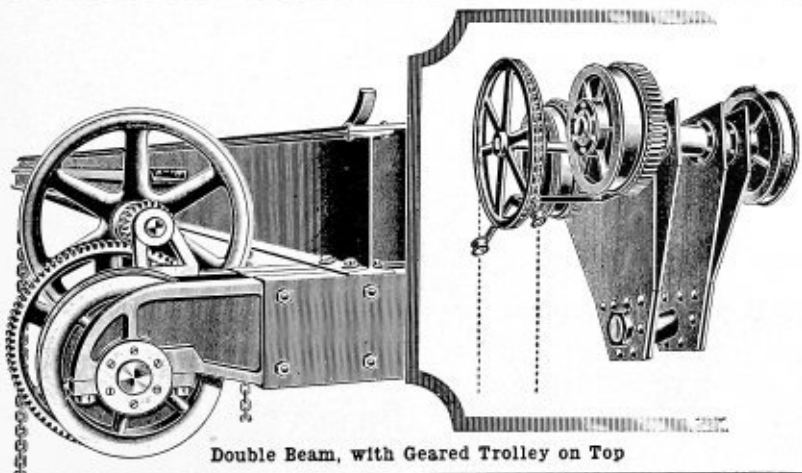
TRAVELING CRANES

HAND POWER



Single Beam with Trolley Inside

No.	Capacity tons	Span feet	Distance from Top of Rail to Highest Point of Bridge, inches	Price with Trolley and without Chain Hoist
6180	½	10 to 12	7¼	$150.00
6181	½	13 " 15	7¼	160.00
6182	1	10 " 12	8½	160.00
6183	1	13 " 15	8½	180.00
6184	1	16 " 18	8½	200.00
6185	1½	12 " 15	11⅜	200.00
6186	1½	16 " 19	11⅜	225.00
6187	1½	20 " 23	11⅜	250.00
6188	2	15 " 18	12½	225.00
6189	2	19 " 22	12½	250.00
6190	2	23 " 26	12½	275.00
6191	3	18 " 21	16	260.00
6192	3	22 " 25	16	300.00
6193	3	26 " 30	16	350.00
6194	4	18 " 21	19½	300.00
6195	4	22 " 25	19½	350.00
6196	4	26 " 30	19½	400.00
6197	5	18 " 21	19½	340.00
6198	5	22 " 25	19½	400.00
6199	5	26 " 30	19½	475.00

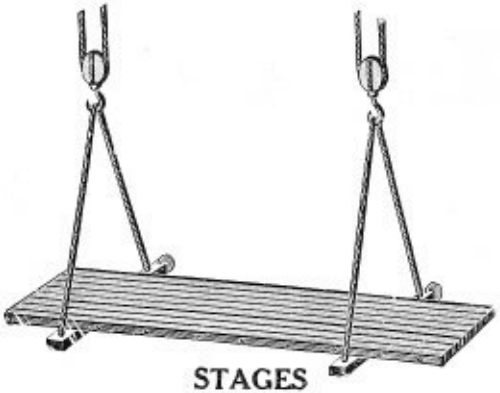


Double Beam, with Geared Trolley on Top

No.	Capacity tons	Span feet	Distance from Top of Rail to Highest Point of Trolley inches	Price with Trolley and without Chain Hoist	No.	Capacity tons	Span feet	Distance from Top of Rail to Highest Point of Trolley inches	Price with Trolley and without Chain Hoist
6210	4	20 to 23	26	$400.00	6218	6	28 to 32	30	$675.00
6211	4	24 " 27	26	475.00	6219	8	22 " 26	35	650.00
6212	4	28 " 32	26	550 00	6220	8	27 " 31	35	750.00
6213	5	20 " 23	29	425 00	6221	8	32 " 36	35	850 00
6214	5	24 " 27	29	525.00	6222	10	22 " 26	39	700.00
6215	5	28 " 32	29	625.00	6223	10	27 " 31	39	800.00
6216	6	20 " 23	30	475.00	6224	10	32 " 36	39	900 00
6217	6	24 " 27	30	575 00					

For prices of Chain Hoists, see pages 98 to 122

PAINTERS' FALLS, STAGES AND LADDERS



STAGES

Sides and Slats made of Clear Norway Pine with Hickory Rungs, put together with heavy screws and made strong and safe in every respect.

Lengths 14 to 28 feet, per ft., $0.36

Cross Bars with Lignum Vitae Rollers, per pair, $2.00

PATENT EXTENSION LADDERS

Weight 3 lbs. per foot.

Made of Clear Norway Pine, Hickory Rungs well put together with long heavy screws. This ladder has a separate iron on each side of it, so constructed that it cannot bend or get out of order. These irons have friction rollers which make the ladder extend easier.

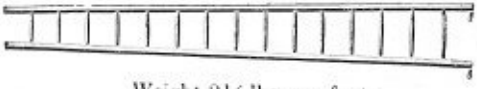
20 to 40 ft. long in two sections.....per foot, $0.20
Over 40 ft. long in three sections..... " .20
Additional..... 1.50

WINDLASS EXTENSION LADDERS

Weight 3¼ lbs. per foot.

24 to 50 ft. long.....per foot, $0.26

LONG LADDERS



Weight 2½ lbs. per foot.

8 to 20 ft. long.....per foot, $0.14

PAINTERS' FALLS

Fitted with Two Single and Double Blocks, Spliced, Ready for Use.

Rope, inches	Length, feet	6 inch Blocks, Common or Patent Bushed, per Set
⅝	30	$....
⅝	40	....
⅝	50	....
⅝	60	....
⅝	75	....
Rope, inches	**Length, feet**	**7 inch Blocks, Common or Patent Bushed, per Set**
¾	50	....
¾	60	....
¾	75	....
¾	100	....
¾	125	....

Steel Hooks.....per pair, $4.00
Upper Slings, 1 in. Rope..... " 1.00
Stirrups, 1 in. Rope..... " 2.00
Guy Lines.....per lb., ...

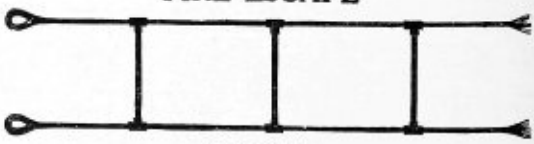
DROP CLOTHS

Size feet	Drilling	7 oz. Duck
9x12.....each,	$1.80	$2.40
12x15..... "	3.00	3.75
14 x 16..... "	3.75	4.80

Any Size to Order.

G. B. C. & CO.'S

IMPROVED ROPE LADDER AND FIRE ESCAPE



Wire Rope

⅜ inch diameter Galvanized Wire Rope, with ⅜ inch diameter Steel Rungs.....per foot, $0.35

Manila Rope

¾ inch diameter Manila Rope, with ⅞ inch diameter Hickory Rungs.....per foot, $0.25

HOISTING ENGINES

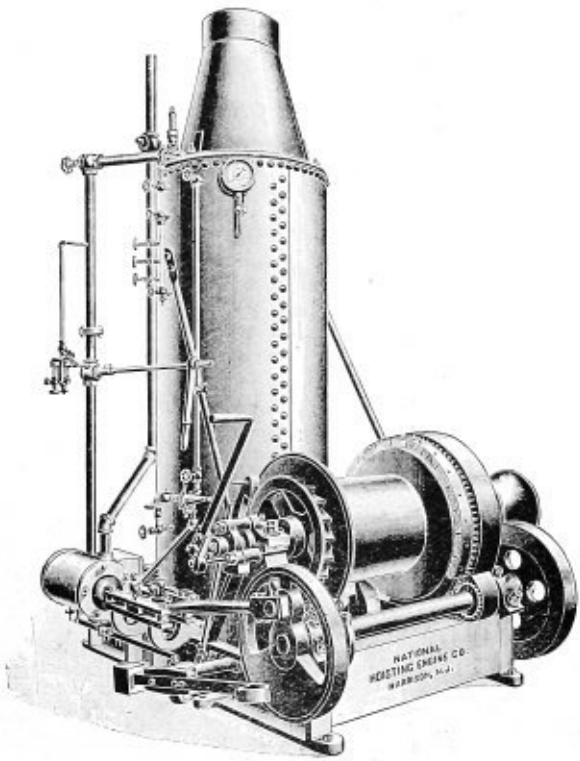
We illustrate here a few types of the most popular Engines of the National Hoisting Engine Co., whose Western Agents we are.

Standard Single Cylinder, Portable Hoisting Engine is equipped with all our latest improvements, which is adapted for all general hoisting purposes, especially for hod and wheelbarrow platform elevators in buildings. Some contractors prefer the single cylinder for pile driving for light work. A winch head is mounted on the outer end of drum shaft, which is used for hoisting the piles, this can be used for running a saw table, centrifugal pump, etc., as the balance wheel on end of engine shaft is used for a belt.

All our Engines are Built on the Duplicate Part System.

Every Engine thoroughly tested with steam before shipment.

We also furnish this Engine with double cylinders and with link reversing motion.



SINGLE CYLINDER, SINGLE FRICTION DRUM HOISTING ENGINE WITH FOOT BRAKE, BOILER AND FIXTURES COMPLETE

Size No. of Engine	H. P. Usually Rated	Dimensions of Cylinder	Dimensions of Drums		Weight Hoisted Average Speed pounds	Suitable Weight of Pile Driving Hammers for Quick Work pounds	Dimensions of Boilers				Estimated Shipping Weight with Boilers Complete, lbs.
			Diameter inches	Length inches			Diameter Shell inches	Height Shell inches	No. of Tubes 2 inches	Length of Tubes inches	
118	6	5½x10	12	18	1,500	1,200	28	68	40	42	4,500
119	8	6¼x10	14	20	2,000	1,600	32	80	55	52	5,000
120	11	7¼x10	14	22	2,500	2,000	34	84	60	56	5,800
121	14	8 x10	14	24	3,500	2,500	36	84	65	56	6,400
122	20	9 x12	16	28	4,500	4,000	40	90	85	62	8,500
123	22	9 x13	16	28	6,000	4,400	40	90	85	62	8,800

Prices on Application.

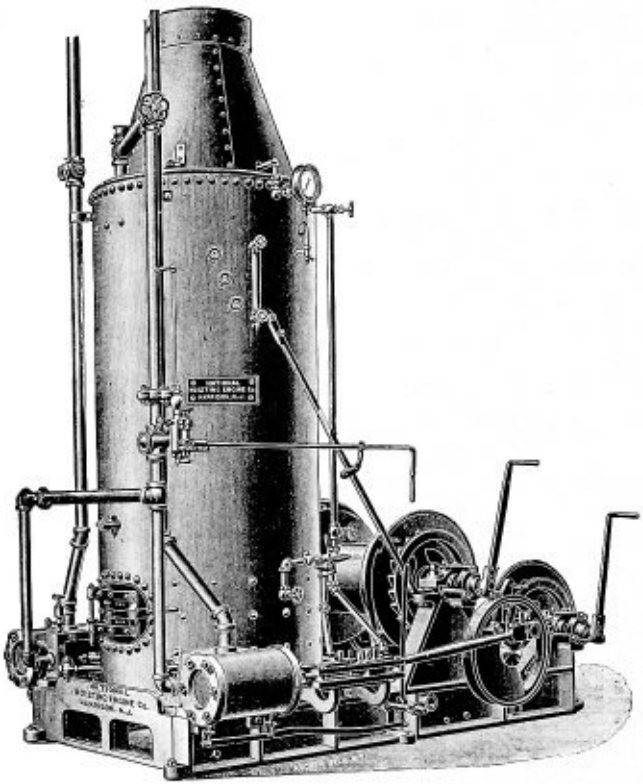
HOISTING ENGINES

Standard Double Cylinder, Double Friction Drum Hoisting Engine, with Boiler and Fixtures, with Double Winch. This Engine is universally adopted for Pile Driving, Sewer Construction, Bridge Building, Railroad Work, Quarrying, and all general hoisting work where double drums are required.

Foot brakes furnished when ordered.

All Engines are Built on the Duplicate Part System.

Every Engine is thoroughly tested with steam before leaving the works.



DOUBLE CYLINDER, DOUBLE FRICTION DRUM HOISTING ENGINE WITH BOILER

Size No. of Engine	H. P. Usually Rated	Dimensions of Cylinder	Dimensions of Drums	Weight Hoisted Single Line	Weight Hammer Quick Work	Dimensions of Boilers				Shipping Weight Complete pounds
						Diameter inches	Height inches	No. of Tubes 2 inch Diameter	Length of Tubes	
190	12	5½x10	12x20	3,000	2,000	34	84	60	56	7,000
192	16	6¼x10	14x22	4,000	2,400	36	84	65	56	7,750
194	22	7¼x10	14x26	6,150	3,000	40	90	85	62	9,570
196	28	8 x10	14x28	7,050	4,000	42	96	90	68	10,340
197	40	9 x12	16x30	9,000	5,000	48	102	142	74	15,400
197¼	45	9 x13	16x30	9,500	5,500	48	102	142	74	15,700
197½	50	10 x12	18x32	10,500	6,000	50	102	155	74	18,400
197¾	55	10 x13	18x32	12,500	6,500	50	102	155	74	18,700

Prices on application.

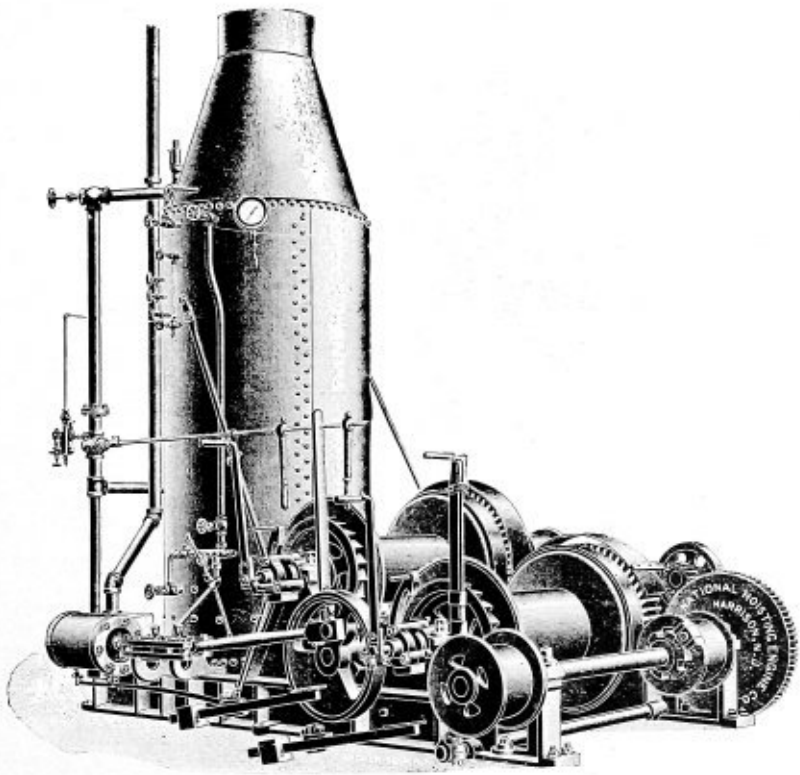
HOISTING ENGINES

Standard Double Cylinder, Double Friction Drum Hoisting Engine, with Boiler and Fixtures, with Patent Reversible Boom Swinging Drum. This engine has no equal for boom derrick work, being so arranged that there is no fouling of lines. This arrangement is far superior to pony drums, as lines have always the same tension, one winding up, while the other is unwinding. The operating lever is arranged in a quadrant, with notches convenient to the engineer to handle so that he can hoist and swing the boom simultaneously. The swing drum is made detachable and can be taken off and the engine used for pile driving, etc.

Foot Brakes furnished when ordered.

All engines are built on the Duplicate Part System.

Every engine thoroughly tested with steam before leaving the works.

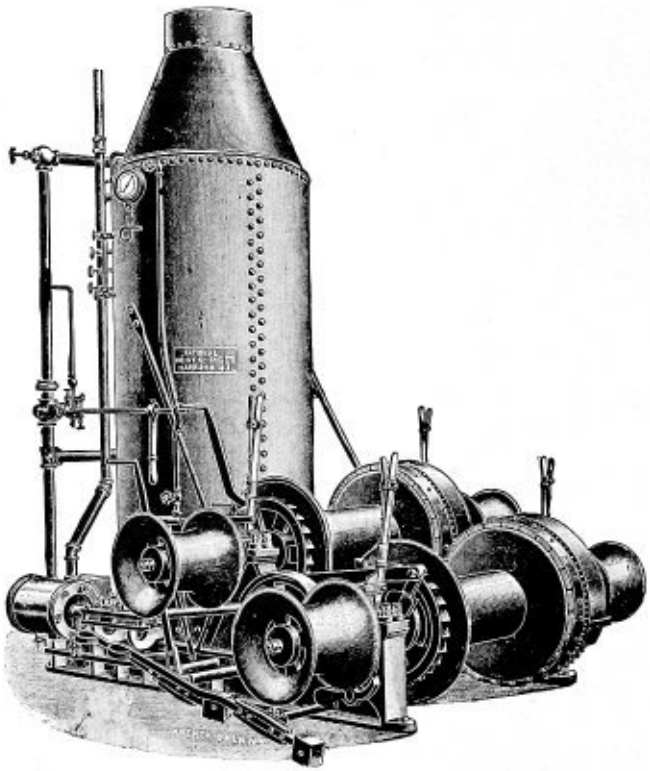


DOUBLE CYLINDER, DOUBLE FRICTION DRUM HOISTING ENGINE, WITH BOILER AND PATENT REVERSIBLE BOOM-SWINGING DRUM

Size No. of Engine	H. P. Usually Rated	Dimensions of Cylinder	Dimensions of Drums	Weight Hoisted Single Line	Weight Hammer Quick Work	Dimensions of Boilers				Shipping Weight Complete pounds
						Diameter inches	Height inches	No. of Tubes 2 in. Diam.	Length of Tubes	
124	12	5½x10	12x20	3,000	2,000	34	84	60	56	8,000
126	16	6¼x10	14x22	4,000	2,500	36	84	65	56	8,750
128	22	7¼x10	14x26	6,150	3,000	40	90	85	62	10,550
130	28	8 x10	14x28	7,000	4,000	42	96	90	68	11,300
131	40	9 x12	16x30	9,000	5,000	48	102	142	74	16,800
131¼	45	9 x13	16x30	9,500	5,500	48	102	142	74	17,000
131½	50	10 x12	18x32	10,500	6,000	50	102	155	74	19,500
131¾	55	10 x13	18x32	12,500	6,500	50	102	155	74	20,000

Prices on application.

HOISTING ENGINES



Double Cylinder, Double Friction Drum Hoisting Engine, with Four Independent Clutch Winches

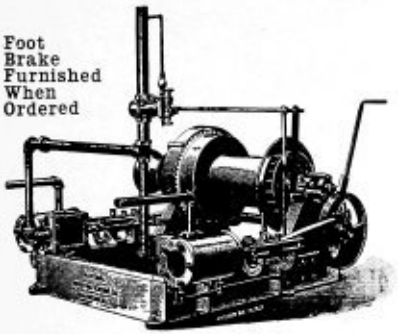
We show a type of an engine that is being used extensively for general construction and bridge erection work. It is a combination of the Winch Engine with friction drums for ordinary hoisting purposes. The engine has double friction drums with brakes and ratchets and pawls. An independent winch head specially designed for bridge erection purposes is mounted on each end of the drum shafts; these winch heads are loose on the shafts and are operated by jaw clutches having levers and notched quadrants. Levers for operating the friction drums and foot levers for operating Brake Bands are brought forward as shown on cut. Convenient for engineer to operate.

All Engines are Built on the Duplicate Part System.

Every Engine is thoroughly tested with steam before leaving the works.

Size No. of Engine	H. P. Usually Rated	Dimensions of Cylinder	Dimensions of Drums	Weight Hoisted Single Line	Weight Hammer Quick Work	Dimensions of Boilers				Shipping Weight Complete, lbs.
						Diam. inches	Height inches	No. of Tubes 2 in. Diam.	Length of Tubes	
286	12	5½x10	12x20	3,000	2,000	34	84	60	56	7,600
288	16	6¼x10	14x22	4,000	2,500	36	84	65	56	8,600
290	22	7¼x10	14x26	6,150	3,000	40	90	85	62	10,700
292	28	8 x10	14x28	7,000	4,000	42	96	90	68	11,500
294	40	9 x12	16x30	9,000	5,000	48	102	142	74	17,000
296	45	9 x13	16x30	9,500	5,500	48	102	142	74	17,300
298	50	10 x12	18x32	10,500	6,000	50	102	155	74	20,000
300	55	10 x13	18x32	12,500	6,500	50	102	155	74	20,700

Prices on Application.



HOISTING ENGINES

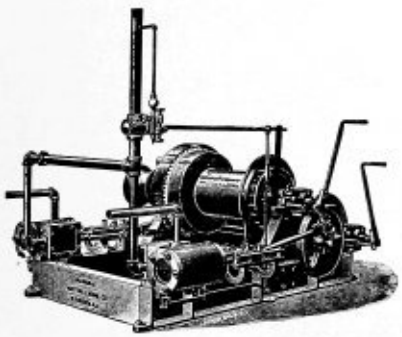
This represents a Double Cylinder Single Friction Drum Hoisting Engine — without boiler — which is adapted for use where only one drum is required, and the steam is furnished from an independent boiler used to supply two or more engines on docks, tunnels, etc. This style of engine can also be operated with compressed air.

All our engines are built on the duplicate part system.

Every engine is thoroughly tested with steam before shipment.

DOUBLE CYLINDER, SINGLE FRICTION DRUM HOISTING ENGINE, WITHOUT BOILER

Size No. of Engine	H. P. Usually Rated	Dimensions of Cylinders	Dimensions of Drums	Weight Hoisted Single Line lbs.	Weight Hammer Quick Work lbs.	Shipping Weight Complete lbs.
166	12	5½x10	12x16	3,000	2,000	3,270
168	16	6¼x10	14x16	4,000	2,400	3,550
170	22	7¼x10	14x18	6,150	3,000	4,300
172	28	8 x10	14x20	7,050	3,500	4,700
173	40	9 x12	16x24	9,000	5,000	6,800
173¼	45	9 x13	16x24	9,500	5,500	7,000
173½	50	10 x12	18x26	10,500	6,000	8,800
173¾	55	10 x13	18x26	12,500	6,500	9,000

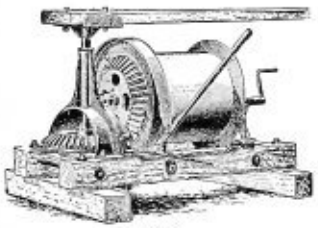


DOUBLE CYLINDER, DOUBLE FRICTION DRUM HOISTING ENGINE WITHOUT BOILER

Size No. of Engine	H. P. Usually Rated	Dimensions of Cylinders	Dimensions of Drums	Weight Hoisted Single Line lbs.	Weight Hammer Quick Work lbs.	Shipping Weight Complete lbs.
174	12	5½x10	12x16	3,000	2,000	4,720
176	16	6¼x10	14x16	4,000	2,400	4,950
178	22	7¼x10	14x18	6,150	3,000	5,970
180	28	8 x10	14x20	7,050	4,000	6,750
181	40	9 x12	16x24	9,000	5,000	9,500
181¼	45	9 x13	16x24	9,500	5,500	10,000
181½	50	10 x12	18x26	10,500	6,000	13,000
181¾	55	10 x13	18x26	12,500	6,500	13,500

Prices on application.

HORSE POWER HOISTING MACHINE



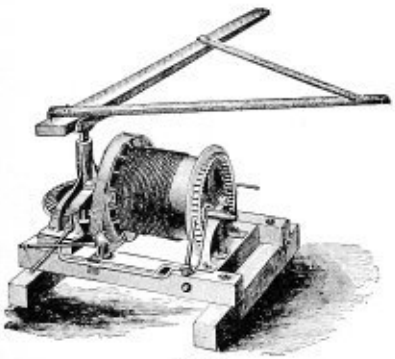
No. 2

No. 2. For the ordinary building of bridge foundation approaches and quarrying.

Capacity. One horse. Single rope, 2,400 lbs., 22 ft. per minute. Single block, 4,800 lbs., 11 f.t per minute. Two single blocks, 7,200 lbs.

Dimensions. Gears, 36 to 36. Drum, 22 in. long, 20 in. diameter. Bed frame, 5 ft. 3 in. long and 2 ft. 9 in. wide. Height, 3 ft. 6 in. Weight, 1,300 lbs.

No. 2. Horse Power Hoisting Machine.....$100.00



No. 3

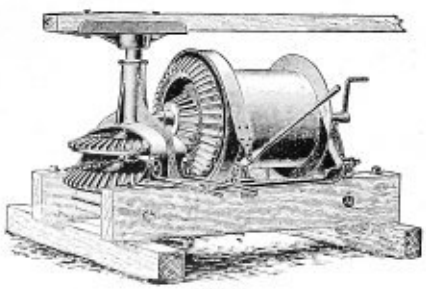
No. 3. For elevating brick and mortar in hods or wheelbarrows in the construction of chimneys, towers, or high buildings.

Capacity. One horse. Single line, 960 lbs., 55 ft. per minute. Single block, 1,900 lbs., 28 ft. per minute.

Dimensions. Gears, 45 and 18 teeth. Drum, 22 in. long and 20 in. diameter. Bed frame, 5 ft. 3 in. long and 3 ft. 3 in. wide. Height, 3 ft. 6 in. Weight, 1,200 lbs.

No. 3.....$100.00

SINGLE DRUM, DOUBLE SPEED



No. 4

No. 4. Designed for the use of builders and quarrymen.

Capacity. One horse. Fast speed, single rope, 960 lbs., 55 ft. per minute; single block, 1,960 lbs., 28 ft. per minute. Slow speed, single rope, 2,400 lbs., 22 ft. per minute; single block, 4,800 lbs., 11 ft. per minute; two single blocks, 7,200 lbs.

Dimensions. Gears, 42 and 42, 45 and 18 teeth. Drum, 22 in. long by 20 in. diameter. Bed frame, 6 ft. long by 3 ft. 3 in wide. Height 4 ft. Weight 1,800 lbs.

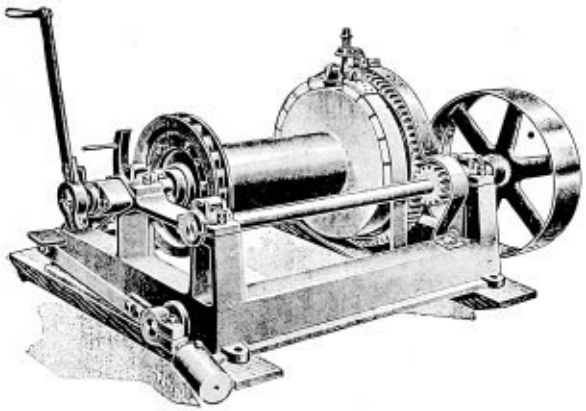
No. 4. Single Drum, Double Speed.....$160.00

DRUM BELT HOISTS

WITH FOOT BRAKE

SINGLE FRICTION

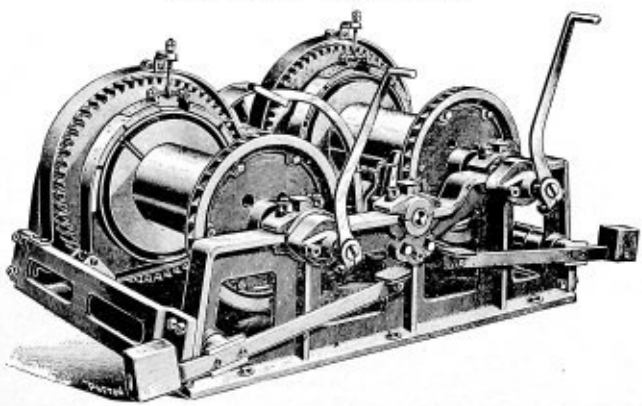
With Winch Head and Foot Brake, Oak Bed Frame



No.	Size of Drum	Size of Pulley	Proportion of Gearing	Weight Hoisted Single Rope lbs.	Speed of Hoist per Minute feet	Price without Winch Head	Extra for Winch Head
6433	6x26	24x 4	15 to 75	1,500	50 to 100	$240.00	$10.00
6434	9x24	24x 6	15 " 75	2,000	75 " 150	250.00	10.00
6435	12x24	28x 8	12 " 60	3,000	100 " 175	265.00	15.00
6436	14x26	28x10	12 " 60	4,000	150 " 200	325.00	15.00
6437	16x26	43x12	12 " 60	6,000	200 " 300	380.00	20.00

Size of Pulley and Speed of Hoist may be changed to suit the conditions.

DOUBLE FRICTION



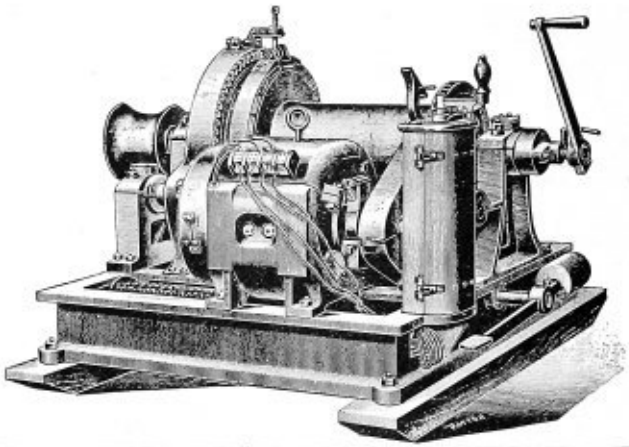
No.	Size of Drums	Size of Pulley	Proportion of Gearing	Weight Hoisted Single Rope lbs.	Speed of Hoist per Minute feet	Price
6440	12x24	26x6	1 to 25	3,000	50 to 75	$550.00
6441	14x26	26x6	1 " 25	4,000	75 " 125	600.00
6442	16x26	28x8	1 " 25	6,000	100 " 200	750.00

Size of Pulley and Speed of Hoist may be changed to suit the conditions.

DRUM ELECTRIC HOIST

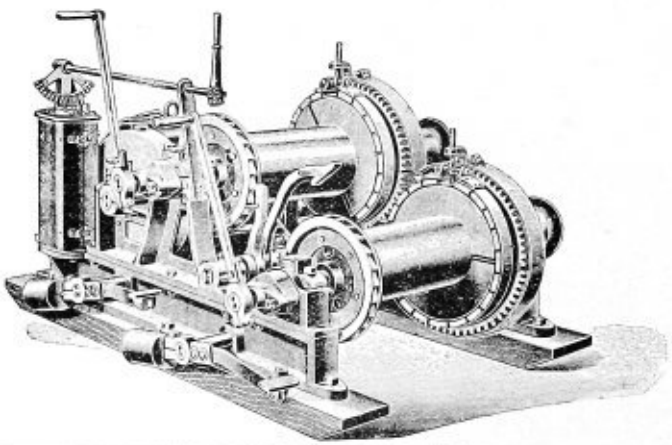
FOR DIRECT CURRENT

SINGLE FRICTION



No.	Motor Horse Power	Style of Motor	Size of Drum inches	Weight Hoisted Single Rope, lbs.	Speed of Hoist in feet per Minute	Price
6446	7½	W. K. 4	9x21	1,800	100	$875.00
6447	11	W. K. 5	10x21	2,700	100	950.00
6448	15	W. K. 6	12x24	3,000	120	1,025.00
6449	20	W. K. 7	12x26	3,300	150	1,075.00
6450	25	W. K. 8	14x26	3,800	160	1,150.00
6451	40	W. K. 10	16x26	6,000	160	1,600.00

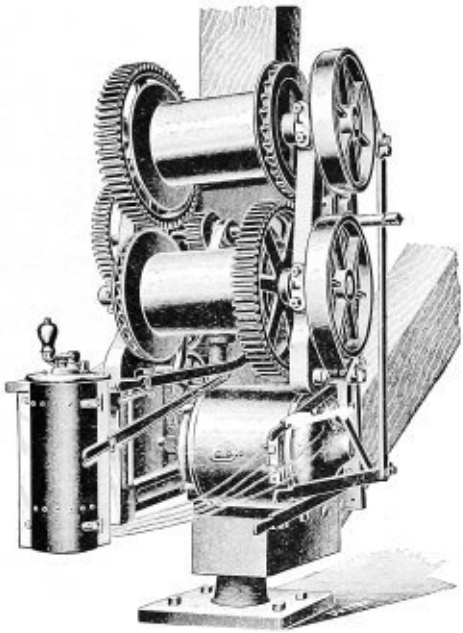
DOUBLE FRICTION



No.	Motor Horse Power	Style of Motor	Size of Drums inches	Weight Hoisted Single Rope, lbs.	Speed of Hoist in feet per Minute	Price
6462	7½	W. K. 4	9x21	1,800	100	$1,150.00
6463	11	W. K. 5	10x21	2,700	100	1,250.00
6464	15	W. K. 6	12x24	3,000	120	1,350.00
6465	20	W. K. 7	12x26	3,300	150	1,400.00
6466	25	W. K. 8	14x26	3,800	160	1,500.00
6467	40	W. K. 10	16x26	6,000	160	2,000.00

DOUBLE DRUM ELECTRIC HOISTS

TO ATTACH TO DERRICK MAST



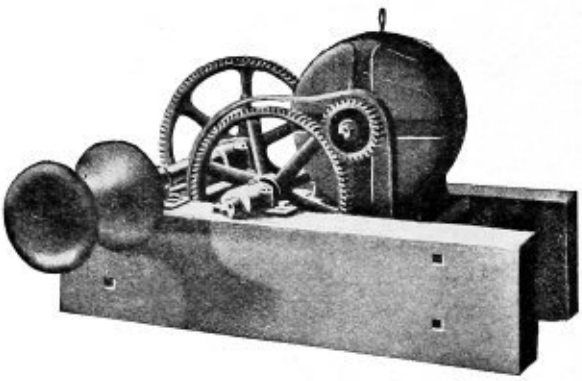
DRUMS THROWN IN AND OUT OF GEAR BY SLIDING PINIONS

No.	Motor Horse Power	Style of Motor	Size of Drums inches	Weight Hoisted Single Rope pounds	Speed of Hoist in feet per minute	Price Each
6452	3¼	W. K. 2	12x16	4,000	23	$700.00
6453	5	W. K. 3	12x16	5,000	23	750.00
6454	7½	W. K. 4	9x21	6,000	34	900.00
6455	15	W. K. 6	10x21	8,000	51	1,200.00

FRICTION DRUMS WITH AND WITHOUT BOOM SWINGING DEVICE

No.	Motor Horse Power	Style of Motor	Size of Drums inches	Weight Hoisted Single Rope pounds	Speed of Hoist in feet per minute	Each Without Swinging Device	Extra for Swinging Device
6456	7½	W. K. 4	9x21	2,000	100	$1,150.00	$350.00
6457	11	W. K. 5	10x21	3,100	100	1,250.00	375.00
6458	15	W. K. 6	12x24	3,400	120	1,350.00	400.00
6459	20	W. K. 7	12x26	3,700	150	1,400.00	450.00
6460	25	W. K. 8	14x26	4,300	160	1,500.00	500.00

WINCH HEAD DIRECT CONNECTED TO ELECTRIC MOTOR



PRICE ON APPLICATION

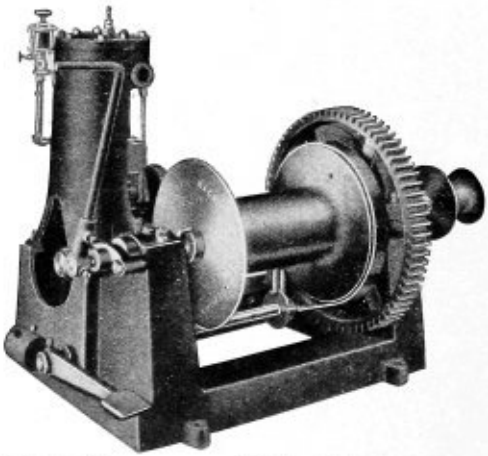
STATE KIND OF CURRENT, VOLTAGE AND CAPACITY REQUIRED

"The Automatic"

PORTABLE GASOLINE HOIST

SWIFT POWERFUL ECONOMICAL DURABLE

For Coal Yards, Contractors, and Builders



6 Horse Power
Drum Flanges, 17 in.
Ratio of Gearing 6 to 1
Drum Barrel, 8 x 17 in.

Weight 1350 lbs

Each, $400.00

DERRICKS, CRABS AND HOISTING APPARATUS

We illustrate on the succeeding pages the well known Dobbie make, whose Western Agents we are, of Derrick fittings and parts; also show a few of the many ways of rigging complete derricks. Where special outfit is designed, we offer the benefit of skilled engineers and their years of practical experience.

We are at all times pleased to furnish advice and estimates.

We can furnish complete outfits in both steel and wood at short notice.

For durability and economy we recommend the steel derricks, which we illustrate in capacities from 5 tons upwards; they are symmetrical and are constructed on mechanical lines. For convenience in erecting and shipping, they can be made in interchangeable sections, which enables a user to lengthen or shorten boom and mast at will.

In the costruction of parts and the building of complete derricks, a good factor of safety is allowed and especial care is taken in constructing and making of fittings.

GEO·B·CARPENTER & CO.

Western Agents.

Dobbie Foundry & Machine Co.

Steel Guy Derrick with Bull Wheel.
Boom, 65 Feet

Steel Guy Derrick. Boom, 65 Feet

STEEL DERRICKS — MASTS

We show the construction of the masts of steel derricks. These varying with capacity required; the lattice work as shown single is furnished in the larger capacity, double sheaves are increased as conditions warrant. Their superiority over the oridinary timber derrick, especially for stationary rig, as well as for contractor's work is generally conceded. They combine strength and light weight besides being handled much easier. For contractor's work, owing to their being built in sections, are in reality a number of timber derricks in one. While the first cost is higher than a timber derrick, this difference is slight in comparison with the saving which is gained.

Mast Top

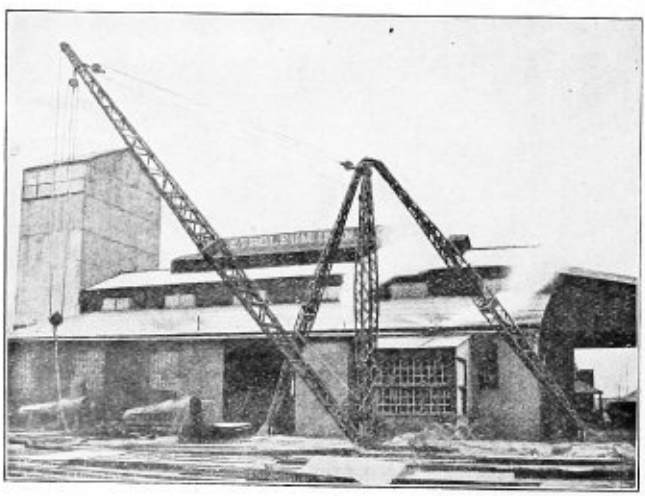
MAST TOP SECTION OF STEEL DERRICK--Sizes and Prices

No.	Capacity tons	Length feet	Price	Weight lbs.
200	5	12½	$180.00	1050
201	10	12½	215.00	1300
202	15	12½	250.00	1625
203	20	12½	290.00	1875
204	30	12½	330.00	2300

MAST BOTTOM SECTION OF STEEL DERRICK--Sizes and Prices

No.	Capacity tons	Length feet	Price	Weight lbs.
206	5	12½	$175.00	900
207	10	12½	210.00	1150
208	15	12½	245.00	1450
209	20	12½	285.00	1825
210	30	12½	325.00	2400

NOTE.— Add price of Step. See list of Derrick Castings, page 166.



Steel Stiff Leg Derrick. 10 Tons Capacity.

Mast Bottom

STEEL DERRICKS

BOOM POINTS

BOOM POINT SECTION OF STEEL DERRICK

Table of Sizes, Prices, Etc.

Boom Point

Order No.	Capacity, Tons	Length Feet	Price	Weight lbs.
212	5	15	$185.00	900
213	10	15	235.00	1325
214	15	15	280.00	1775
215	20	15	320.00	2100
216	30	15	380.00	2650

NOTE.—One sheave and bail for boom fall and one sheave and bail for main fall included in above price.

BOOM BOTTOM SECTION OF STEEL DERRICK

Table of Sizes, Prices, etc.

Order No.	Capacity, Tons	Length Feet	Price	Weight lbs.
218	5	15	$160.00	875
219	10	15	205.00	1,225
220	15	15	250.00	1,690
221	20	15	290.00	2,000
222	30	15	350.00	2,500

Illustrations show end sections of booms, the construction of which is frequently changed to allow a sheave in the lower end for the load line. Bails for both boom and load lines at the point are also used and such sheaves as the load requires. Bails are frequently placed on the outside of the boom and both on one pin in place of inside as illustrated.

Boom Bottom

STEEL DERRICKS

Intermediate Sections

We illustrate here middle sections which are used in mast, boom, and stiff legs, varying in length and diameter in proportion to height wanted. When load line leads direct to the heel of the boom, idler rollers are placed at intervals on the upper side to keep it away from the steel.

Intermediate Section for Mast or Boom Steel Derrick

TABLE OF SIZES AND PRICES

No.	Capacity tons	Length feet	Price	Weight lbs.
224	5	10	$90.00	725
225	5	15	110.00	950
226	5	20	130.00	1,175
227	5	25	150.00	1,400
228	5	30	175.00	1,625
229	5	45	260.00	2,350
230	10	10	120.00	1,050
231	10	15	145.00	1,375
232	10	20	172.00	1,725
233	10	25	200.00	2,100
234	10	30	225.00	2,450
235	10	45	340.00	3,500
236	15	10	145.00	1,400
237	15	15	190.00	1,900
238	15	20	225.00	2,400
239	15	25	260.00	2,875
240	15	30	310.00	3,800
241	15	45	440.00	4,800
242	20	10	180.00	1,600
243	20	15	225.00	2,150
244	20	20	265.00	2,800
245	20	25	315.00	3,450
246	20	30	365.00	4,100
247	20	45	510.00	5,800
248	30	10	230.00	2,000
249	30	15	280.00	2,650
250	30	20	330.00	3,500
251	30	25	390.00	4,300
252	30	30	450.00	5,000
253	30	45	600.00	7,250

Extra for Idler Rollers: 5 and 10 ton, $6.00 each; 15 and 20 ton, $7.00 each; 30 ton, $8.00 each.

STEEL DERRICKS

TOP SECTION OF STIFF LEG STEEL DERRICK

Table of Sizes, Prices, etc.

No.	Capacity tons	Length feet	Price	Weight lbs.
255	5	19	$135.00	900
256	5	22	155.00	1,000
257	5	25	175.00	1,100
258	5	29	195.00	1,200
259	10	19	168.00	1,225
260	10	22	188.00	1,350
261	10	25	210.00	1,500
262	10	29	235.00	1,650
263	15	19	225.00	1,775
264	15	22	245.00	2,000
265	15	25	272.00	2,200
266	15	29	300.00	2,450
267	20	19	290.00	2,450
268	20	22	315.00	2,550
269	20	25	342.00	2,800
270	20	29	370.00	3,050
271	30	19	340.00	3,500
272	30	22	385.00	3,900
273	30	25	430.00	4,300
274	30	29	480.00	4,800

BOTTOM SECTION OF STIFF LEG STEEL DERRICK

Table of Sizes, Prices, etc.

No.	Capacity tons	Length feet	Price	Weight lbs.
276	5	19	$145.00	900
277	5	22	165.00	1,000
278	5	25	185.00	1,100
279	5	29	205.00	1,200
280	10	19	180.00	1,225
281	10	22	200.00	1,350
282	10	25	225.00	1,500
283	10	29	250.00	1,650
284	15	19	235.00	1,775
285	15	22	260.00	2,000
286	15	25	285.00	2,200
287	15	29	310.00	2,400
288	20	19	290.00	2,400
289	20	22	315.00	2,550
290	20	25	342.00	2,800
291	20	29	370.00	3,050
292	30	19	340.00	3,500
293	30	22	385.00	3,900
294	30	25	430.00	4,300
295	30	29	480.00	4,800

Illustrations show the usual form of construction of our stiff legs. The upper end or "Gooseneck" is made for great strength. The lower end can be fitted for a pin connection, if desired.

STEEL DERRICKS

RAILROAD STIFF LEG DERRICKS

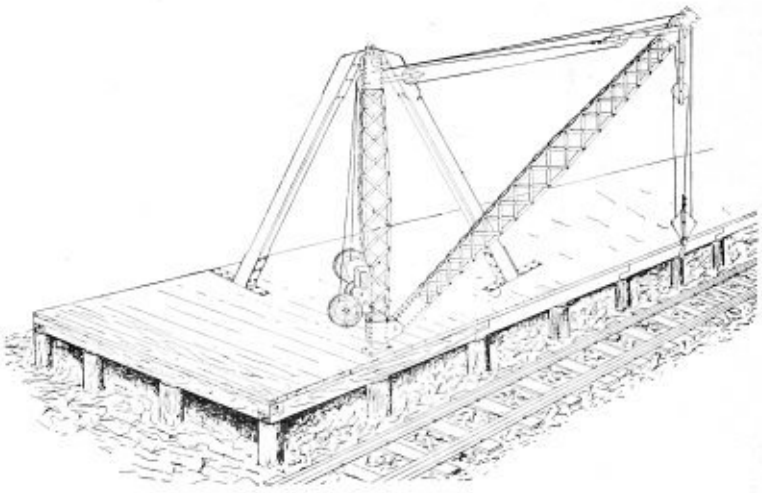
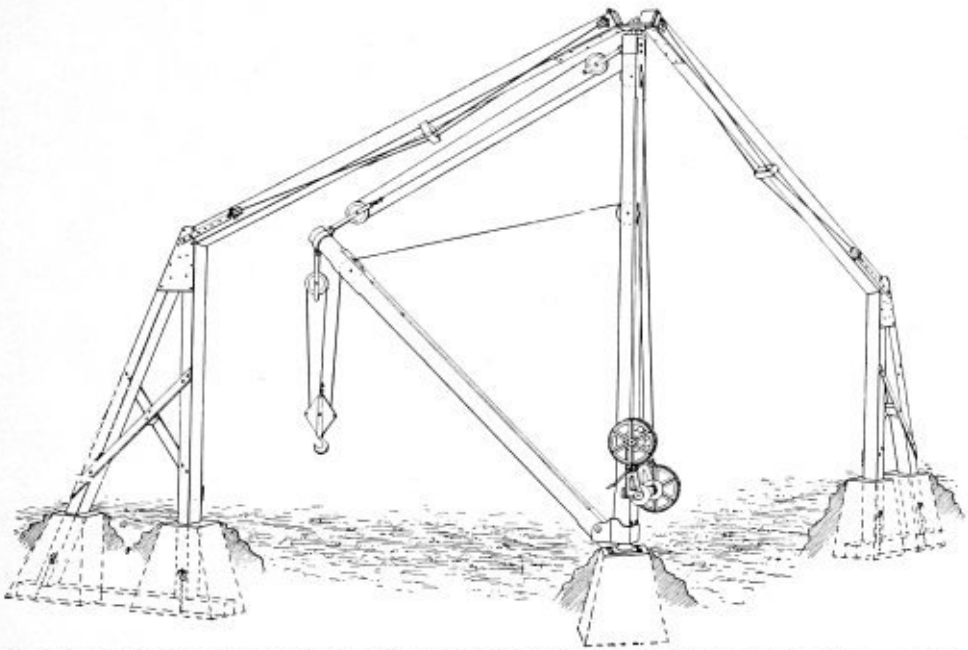


Illustration shows an excellent derrick for loading and unloading cars. Fitted with double drum crab, the boom can be raised or lowered at will, either with or without a load, thereby greatly increasing the effective radius of the derrick. Crab has safety brake for lowering. Steel stiff legs can be substituted for wood, if desired. Can rig either wire or Manila rope, as wanted.

No.	Mast feet	Boom feet	5 Ton		10 Ton		15 Ton		20 Ton	
			Price	Weight	Price	Weight	Price	Weight	Price	Weight
297	15	23	$500	4,500	$636	6,000	$815	7,800	$985	9,400
298	20	30	600	5,400	742	7,100	937	8,200	1,163	11,200
299	35	38	710	6,500	875	8,700	1,100	10,800	1,380	12,900
300	30	45	820	7,800	1,030	10,500	1,286	12,900	1,600	15,700

Price is for the complete derrick, except timbers and rope.

FULL CIRCLE STIFF LEGGED DERRICK No. 74



The advantage of this style of Derrick is the ability to have a boom swing the full circle and this style of rig taking less room than where guys are used. The frames supporting the stiff legs are varied as may be desired.

LIST OF FITTINGS

Without Hand Power, Timber and Rope

Description of Parts	Price "A" 10 inch Mast	"B" 12 inch Mast	"C" 14 inch Mast	"D" 16 inch Mast
1 Standard Foot Block	$11.50	$14.50	$21.00	$42.00
1 Plain Step	4.00	4.50	6.50	8.50
1 Mast Top, Square	12.00	15.00	21.00	27.00
2 Straps for Top of Legs	19.00	22.00	28.00	36.00
4 Straps for Bottom of A Frames	16.00	24.00	40.00	56.00
2 Sets Straps for A Frame and Leg Connections	24.00	40.00	48.00	70.00
4 Truss Rods	60.00	68.00	78.00	92.00
1 Flat Boom Band	5.00	6.50	7.50	9.80
3 P. B. B. Sheaves	8.00	8.50	9.80	11.40
3 Pins for Sheaves	1.65	1.95	2.25	2.55
3 Strap Blocks	16.50	21.00	27.75	34.50
1 Swivel Hook Hoisting Block	11.00	13.75	23.00	33.00
Price, Total	$188.65	$239.70	$312.80	$422.75
Rope Fittings: 4 Clips	$1.20	$1.40	$1.60	$1.80
Rope Fittings: 2 Thimbles	.22	.26	.30	.32
Price, Complete	$190.07	$241.36	$314.70	$424.87
Sizes: Square Timber, Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes: Square Timber, Mast at Top, inches	8x 8	10x10	12x12	14x14
Sizes: Square Timber, Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes: Square Timber, Boom at Point, inches	8x 8	10x10	12x12	14x14
Sizes: Approximate Capacity, tons	3	6	10	15

STIFF LEGGED, HAND POWER DERRICK No. 75

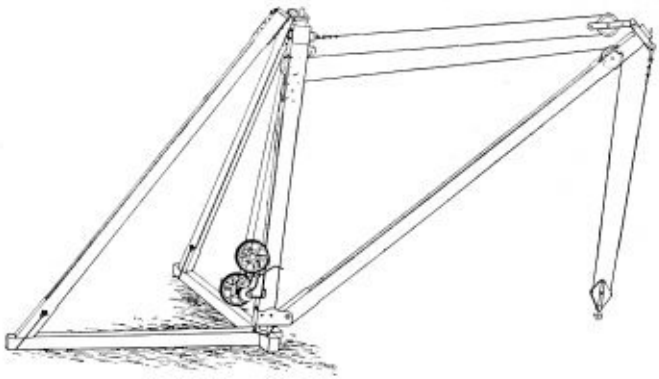


Illustration shows stiff leg derrick operated by hand power. Where speed is not a factor, this style of derrick will give perfect satisfaction.

PRICE LIST OF FITTING

Without Hand Power, Timber and Rope

Description of Parts	Price			
	"A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 Standard Foot Block	$11.50	$14.50	$21.00	$42.00
1 Plain Step	4.00	4.50	6.50	8.50
1 Mast Top, Square	12.00	15.00	21.00	27.00
2 Straps for Top of Legs	19.00	22.00	28.00	36.00
2 Straps for Bottom of Legs	8.00	12.00	20.00	28.00
1 Flat Boom Band	5.00	6.50	7.50	9.80
2 Shackles	1.20	1.84	3.34	5.00
1 Idler Sheave and Boxes for Top of Mast	1.80	1.80	2.15	2.65
1 P. B. B. Sheave for Top of Mast	3.00	3.00	3.40	4.00
1 P. B. B. Sheave for Top of Mast	2.50	2.50	3.00	3.40
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
3 Pins for Sheaves	1.65	1.95	2.25	2.55
1 Swivel Hook	11.00	13.75	23.00	33.00
1 Strap Block for Boom	5.50	7.00	9.25	11.50
Price, Total	$88.65	$109.34	$153.79	$217.40
Rope Fittings: 4 Clips	$1.20	$1.40	$1.60	$1.80
Rope Fittings: 2 Thimbles	.22	.26	.30	.32
Price, Complete	$90.07	$111.00	$155.69	$219.52
Sizes: Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes: Square Timber Mast at Top, inches	8x 8	10x10	12x12	14x14
Sizes: Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes: Square Timber Boom at Point, inches	8x 8	10x10	12x12	14x14
Sizes: Approximate Capacity, Tons	3	6	10	15

Capacities given are approximate for boom of equal length with mast.

For a boom of greater length than mast capacity should be determined according to relative proportion.

STIFF LEGGED HAND POWER DERRICK

No. 76

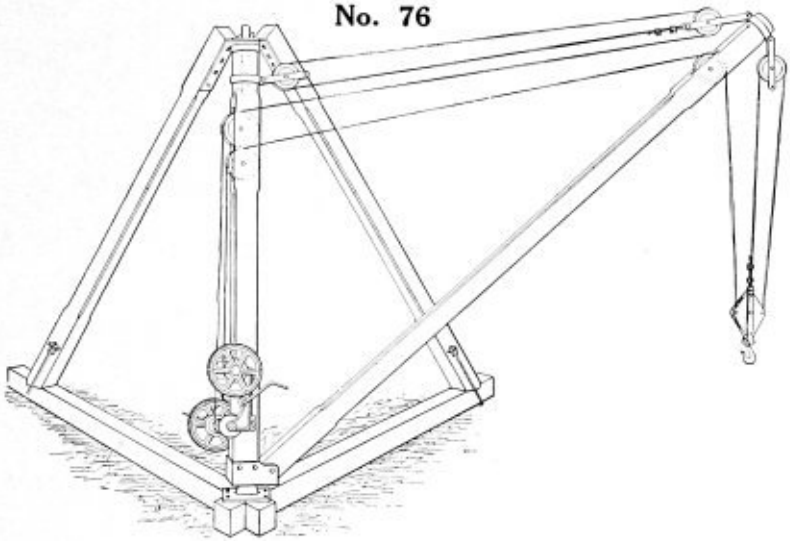


Illustration shows ordinary stiff leg derrick operated entirely by hand power. This is the cheapest form of derrick, and, while slow in operation, is very efficient. Fittings can be varied as may be desired, retaining original design of rig.

PRICE LIST OF FITTINGS

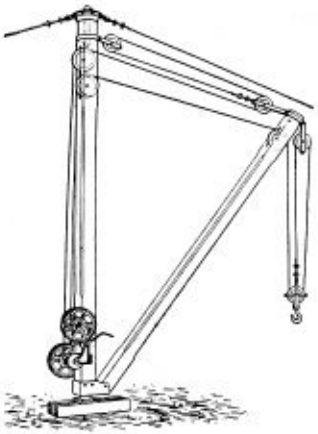
Without Hand Power, Timber and Rope

Description of Parts	Price			
	"A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 Standard Foot Block	$11.50	$14.50	$21.00	$42.00
1 Plain Step	4.00	4.50	6.50	8.50
1 Flat Band with One Eye	3.35	4.30	6.25	6.90
1 Plain Round Cap	1.80	2.50	3.25	4.50
1 Wrought Gudgeon	5.00	6.00	7.50	9.50
2 Straps for Top of Legs	19.00	22.00	28.00	36.00
2 Straps for Bottom of Legs	8.00	12.00	20.00	28.00
1 Flat Band with Two Eyes	5.00	6.50	7.50	9.80
1 P. B. B. Sheave for Top of Mast	3.00	3.00	3.40	4.00
1 P. B. B. Sheave for Top of Mast	2.50	2.50	3.00	3.40
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
3 Pins for Sheaves	1.65	1.95	2.25	2.55
1 Diamond Shell Block	13.00	16.50	25.50	34.00
3 Clevise Blocks	16.50	21.00	27.75	34.50
Price, Total	$96.80	$120.25	$165.30	$227.65
Rope Fittings: 4 Clips	$1.20	$1.40	$1.60	$1.80
Rope Fittings: 2 Thimbles	.22	.26	.30	.32
Price, Complete	$98.22	$121.91	$167.20	$229.77
Sizes: Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes: Square Timber Mast at Top, inches	8x 8	10x10	12x12	14x14
Sizes: Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes: Square Timber Boom at Point, inches	8x 8	10x10	12x12	14x14
Sizes: Approximate Capacity, Tons	3	6	10	15

Capacities are approximate only and do not apply to very long mast and boom.

HAND POWER GUY DERRICK

No. 77



This illustration shows a derrick similar to the No. 76 with the exception that is it fitted for guys in place of stiff leg.

PRICE LIST OF FITTINGS

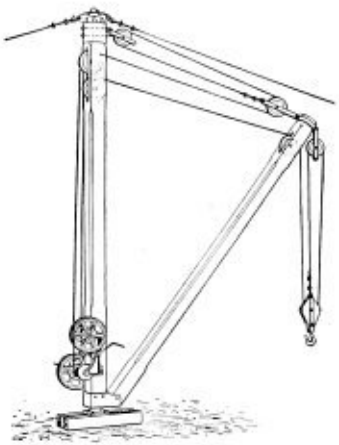
Without Hand Power, Timber and Rope

Description of Parts		Price			
		"A" 10 inches Mast	"B" 12 inches Mast	"C" 14 inches Mast	"D" 16 inches Mast
1 Standard Foot Block		$11.50	$14.50	$21.00	$42.00
1 Plain Step		4.00	4.50	6.50	8.50
1 Flat Band with One Eye		3.35	4.30	6.25	6.90
1 Plain Round Cap		1.80	2.50	3.25	4.50
1 Wrought Gudgeon		4.20	5.00	6.00	7.50
1 Guy Cap		6.50	8.30	10.00	13.50
1 Flat Band with Two Eyes		5.00	6.50	7.50	9.80
1 P. B. B. Sheave for Top of Mast		3.00	3.00	3.40	4.00
1 P. B. B. Sheave for Top of Mast		2.50	2.50	3.00	3.40
1 P. B. B. Sheave for Point of Boom		2.50	3.00	3.40	4.00
3 Pins for Sheaves		1.65	1.95	2.25	2.55
1 Swivel Hoisting Block		13.00	16.50	25.50	34.00
3 Clevise Blocks		16.50	21.00	27.75	34.50
Price, Total		$75.50	$93.55	$125.80	$175.15
Rope Fittings	15 Guy Clips	$6.00	$6.75	$7.50	$9.75
	4 Hoisting Rope Clips	1.20	1.40	1.60	1.80
	7 Thimbles	.97	1.06	1.30	1.97
Price, Complete		$83.67	$102.76	$136.20	$188.67
Sizes	Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
	Square Timber Mast at Top, inches	8x 8	10x10	12x12	14x14
	Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
	Square Timber Boom at Point, inches	8x 8	10x10	12x12	14x14
	Approximate Capacity, Tons	3	6	10	15

Capacities are approximate only and do not apply to very long mast and boom.

HAND POWER GUY DERRICK

No. 78



This derrick is an improvement over the No. 77 in that it has an iron mast top in place of a pin inserted in the wood, thereby strengthening the mast at that point. It is for hand power.

PRICE LIST OF FITTINGS

Without Hand Power, Timber and Rope

Description of Parts		Price			
		"A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 Standard Foot Block		$11.50	$14.50	$21.00	$42.00
1 Plain Step		4.00	4.50	6.50	8.50
1 Mast Top, Round		12.00	15.00	21.00	27.00
1 Guy Cap		6.50	8.30	10.00	13.50
1 Flat Band with Two Eyes		5.00	6.50	7.50	9.80
1 P. B. B. Sheave for Top of Mast		3.00	3.00	3.40	4.00
1 P. B. B. Sheave for Top of Mast		2.50	2.50	3.00	3.40
1 P. B. B. Sheave for Point of Boom		2.50	3.00	3.40	4.00
3 Pins for Sheaves		1.65	1.95	2.25	2.55
1 Diamond Shell Block		13.00	16.50	25.50	34.00
3 Clevise Blocks		16.50	21.00	27.75	34.50
Price, Total		$78.15	$96.75	$131.30	$183.25
Rope Fittings	15 Guy Clips	$6.00	$6.75	$7.50	$9.75
	4 Hoisting Rope Clips	1.20	1.40	1.60	1.80
	7 Thimbles	.97	1.06	1.30	1.97
Price, Complete		$86.32	$105.96	$141.70	$196.77
Sizes	Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
	Square Timber Mast at Top, inches	8x 8	10x10	12x12	14x14
	Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
	Square Timber Boom at Point, inches	8x 8	10x10	12x12	14x14
	Approximate Capacity, Tons	3	6	10	15

Capacities are approximate only and do not apply to very long mast and boom.

GUY DERRICK No. 79

Main Fall to be Operated by Single Drum, Steam, or Horse Power

Boom Raised and Lowered by Hand

The boom of this Derrick is raised and lowered by Manila rope tackle and fastened to a cleat on the mast. This, of course, can only be done when there is no load. The load line is operated by either steam, belt horse power, or electricity.

PRICE LIST OF FITTINGS

Without Hand Power, Timber, Rope, and Tackle Blocks

Description of Parts	Price			
	"A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 American Foot Block	$12.00	$15.00	$22.00	$43.00
1 Step with Single Sheave	9.00	11.00	13.50	16.00
1 Bracket with Single Sheave	5.50	6.00	8.50	10.00
1 Flat Band with One Link	3.85	5.00	7.50	8.50
1 Plain Round Cap	1.80	2.50	3.25	4.50
1 Wrought Gudgeon	4.20	5.00	6.00	7.50
1 Guy Cap	6.50	8.30	10.00	13.50
1 Flat Band with Two Eyes	5.00	6.50	7.50	9.80
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
1 Pin for Sheave	.55	.65	.75	.85
1 Clevise Block for Main Fall	5.50	7.00	9.25	11.50
1 Swivel Hoisting Block	13.00	16.50	25.50	34.00
Price, Total	$69.40	$86.45	$117.15	$163.15
Rope Fittings: 15 Guy Clips	$6.00	$6.75	$7.50	$9.75
Rope Fittings: 2 Hoisting Rope Clips	.60	.70	.80	.90
Rope Fittings: 6 Thimbles	.86	.96	1.15	1.81
Price, Complete	$76.86	$94.86	$126.60	$175.61
Sizes: Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes: Square Timber Mast at Top, inches	8x 8	10x10	12x12	14x14
Sizes: Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes: Square Timber Boom at Point, inches	8x 8	10x10	12x12	14x14
Sizes: Approximate Capacity, tons	3	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

GUY DERRICK No. 80

Main Fall Operated by Single Drum, Steam or Horse Power

Boom by Single Drum, Hand Power

This Derrick is an improvement on No. 79, in that the boom can be raised and lowered with or without load on it with the aid of the crab. Single or double purchase can be used, and Manila or wire rope as desired.

PRICE LIST OF FITTINGS

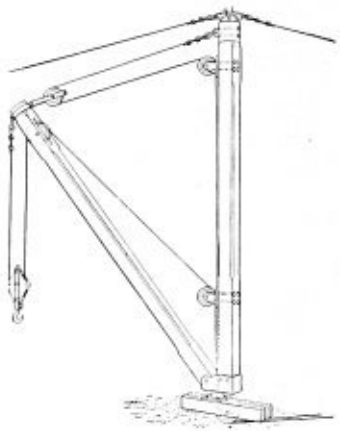
Without Hand Power, Timber, Rope and Tackle Blocks

Description of Parts		Price			
		"A" 10 inch Mast	"B" 12 inch Mast	"C" 14 inch Mast	"D" 16 inch Mast
1 Standard Foot Block		$11.50	$14.50	$21.00	$42.00
1 Step with Single Sheave		9.00	11.00	13.50	16.00
1 Sheave and Boxes for Centre of Mast		6.00	6.75	7.50	9.00
1 Mast Top, Square		12.00	15.00	21.00	27.00
1 Guy Cap		6.50	8.30	10.00	13.50
1 Round Boom Band		3.60	4.00	5.00	6.00
1 P. B. B. Sheave for Point of Boom		2.50	3.00	3.40	4.00
1 P. B. B. Sheave for Top of Mast		2.50	3.00	3.40	4.00
2 Pins for Sheaves		1.10	1.30	1.50	1.70
1 Swivel Hoisting Block		13.00	15.25	22.50	32.00
Price, Total		$67.70	$82.10	$108.80	$155.20
Rope Fittings	15 Guy Clips	$6.00	$6.75	$7.50	$9.75
	2 Hoisting Rope Clips	.60	.70	.80	.90
	6 Thimbles	.86	.96	1.15	1.81
Price, Complete		$75.16	$90.51	$118.25	$167.66
Sizes	Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
	Square Timber Mast at Top, inches	8x 8	10x10	12x12	14x14
	Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
	Square Timber Boom at Point, inches	8x 8	10x10	12x12	14x14
	Approximate Capacity, tons	3	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

GUY DERRICK No. 81

OPERATED BY DOUBLE DRUM, STEAM OR HORSE POWER.



With this Derrick rig, both load and boom lines are operated by power. Our illustration shows one of the simplest and cheapest methods of rigging. With single blocks as illustrated, the capacity of the Derrick is limited to the amount of power used.

PRICE LIST OF FITTINGS

Without Timber and Rope

Description of Parts	Price			
	"A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 American Foot Block	$12.00	$15.00	$22.00	$43.00
1 Step with Two Sheaves	11.50	14.00	16.50	19.50
1 Round Mast Top	12.00	15.00	21.00	27.00
1 Flat Band with Two Eyes	5.00	6.50	7.50	9.80
1 Guy Cap	6.50	8.30	10.00	13.50
1 Bracket with Two Sheaves	8.80	10.60	11.50	13.50
1 Bracket with One Sheave	6.60	7.60	8.50	10.00
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
1 Pin for Sheave	.55	.65	.75	.85
1 Diamond Shell Block, Swivel Hook	13.00	16.50	25.50	34.00
1 Clevise Block for Boom	5.50	7.00	9.25	11.50
Price, Total	$83.95	$104.15	$135.90	$186.65
Rope Fittings: 15 Guy Clips	6.00	6.75	7.50	9.75
Rope Fittings: 4 Hoisting Rope Clips	1.20	1.40	1.60	1.80
Rope Fittings: 7 Thimbles	.97	1.06	1.30	1.97
Price, Complete	$92.12	$113.36	$146.30	$200.17
Sizes: Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes: Square Timber Mast at Top, inches	8x 8	10x10	12x12	14x14
Sizes: Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes: Square Timber Boom at Point, inches	8x 8	10x10	12x12	14x14
Sizes: Approximate Capacity, tons	3	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

GUY DERRICK, No. 82

OPERATED BY DOUBLE DRUM, STEAM OR HORSE POWER

This Derrick is fitted with the combination foot block; a sheave being inserted in the heel of the boom, the load line being carried down the boom over this sheave to the pivot center of the Derrick.

PRICE LIST OF FITTINGS

Without Timber and Rope

Description of Parts		Price "B" 12-inch Mast	Price "C" 14-inch Mast	Price "D" 16-inch Mast
1 Combination Foot Block		$30.00	$40.00	$54.00
1 Step with Two Sheaves		14.00	16.50	19.50
1 Mast Top, Round		15.00	21.00	27.00
1 Flat Band with Two Eyes		6.50	7.50	9.80
1 Guy Cap		8.30	10.00	13.50
1 Bracket with One Sheave		7.60	8.50	10.00
1 P. B. B. Sheave for Point of Boom		3.00	3.40	4.00
1 Pin for Sheave		.65	.75	.85
1 Diamond Shell Block, Swivel Hook		16.50	25.50	34.00
1 Clevise Block for Boom		7.00	9.25	11.50
Price, Total		$108.55	$142.40	$184.15
Rope Fittings	15 Guy Clips	$6.75	$7.50	$9.75
	4 Hoisting Rope Clips	1.45	1.60	1.80
	7 Thimbles	1.06	1.30	1.97
Price, Complete		$117.76	$152.80	$197.67
Sizes	Square Timber Mast at Bottom, inches	12x12	14x14	16x16
	Square Timber Mast at Top, inches	10x10	12x12	14x14
	Square Timber Boom at Bottom, inches	10x12	12x14	14x16
	Square Timber Boom at Point, inches	10x10	12x12	14x14
	Approximate Capacity, tons	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

GUY DERRICK No. 83

Operated by Double Drum, Steam or Horse Power

We show here another form of rigging, three lines being used. When we use the Am. foot block, as in this rig, the upper pivot is the center of the mast; the mast must be out of plumb. This does not affect the swinging of the Derrick as the pivots are plumb.

PRICE LIST OF FITTINGS

Without Timber and Rope

Description of Parts	Price "A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 American Foot Block	$12.00	$15.00	$22.00	$43.00
1 Step with Two Sheaves	11.50	14.00	16.50	19.50
1 Square Mast Top	12.00	15.00	21.00	27.00
1 Flat Band with Two Eyes	5.00	6.50	7.50	9.80
1 Guy Cap	6.50	8.30	10.00	13.50
1 Bracket with Two Sheaves	8.80	10.60	11.50	13.50
1 Bracket with One Sheave	6.60	7.60	8.50	10.00
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
1 Pin for Sheave	.55	.65	.75	.85
1 Single Half Shell Block, Swivel Hook	13.00	16.50	24.00	31.00
3 Clevise Blocks	16.50	21.00	27.75	34.50
Price, Total	$94.95	$118.15	$152.90	$206.65
Rope Fittings: 15 Guy Clips	$6.00	$6.75	$7.50	$9.75
Rope Fittings: 4 Hoisting Rope Clips	1.20	1.40	1.60	1.80
Rope Fittings: 7 Thimbles	.97	1.06	1.30	1.97
Price, Complete	$103.12	$127.36	$163.30	$220.17
Sizes: Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes: Square Timber Mast at Top, inches	8x8	10x10	12x12	14x14
Sizes: Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes: Square Timber Boom at Point, inches	8x8	10x10	12x12	14x14
Sizes: Approximate Capacity, tons	3	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

GUY DERRICK No. 84

With Rooster, Operated by Double Drum Hoisting Engine

This Derrick is rigged differently from any of the preceding ones, a rooster being used on the top to carry the boom line. The advantages of this rig are with only one rope at the bottom, the Derrick can be revolved in either direction without interfering with the lines, also prevents chafing of the lines.

PRICE LIST OF FITTINGS

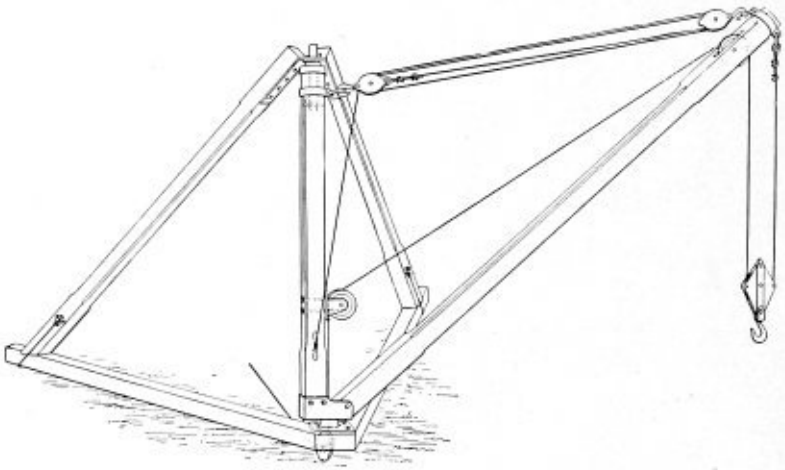
Without Timber and Rope

Description of Parts		Price			
		"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast	"E" 18 in. Mast
1 Standard Foot Block		$14.50	$21.00	$42.00	$45.00
1 Step with Single Sheave		11.00	13.50	16.00	24.00
1 Mast Top with Rooster and Guy Cap		69.00	85.50	110.50	140.00
2 Side Straps for Foot of Boom		6.00	10.00	12.00	17.50
1 Sheave and Boxes for Centre of Mast		6.75	7.50	9.00	11.50
1 P. B. B. Sheave for Point of Boom		3.00	3.40	4.00	4.00
1 Pin for Sheave		.65	.75	.85	.85
1 Boom Band with Straps and Sheave Pin		17.00	20.00	23.25	23.25
2 Strap Blocks for Point of Boom		14.00	18.50	23.00	30.00
1 Swivel Hoisting Block		16.50	25.50	35.50	49.00
Price, Total		$158.40	$205.65	$276.10	$345.10
Rope Fittings	15 Guy Clips	$6.75	$7.50	$9.75	$9.75
	4 Hoisting Rope Clips	1.20	1.60	1.80	1.80
	7 Thimbles	.97	1.30	1.97	1.97
Price, Complete		$167.32	$216.05	$289.62	$358.62
Sizes	Square Timber Mast at Bottom, inches	12x12	14x14	16x16	18x18
	Square Timber Mast at Top, inches	10x10	12x12	14x14	16x16
	Square Timber Boom at Bottom, inches	10x12	12x14	14x16	16x18
	Square Timber Boom at Point, inches	10x10	12x12	14x14	14x14
	Approximate Capacity, Tons	6	10	15	20

Capacities are approximate only, and do not apply to very long mast and boom.

STIFF LEGGED DERRICK No. 85

FOR SINGLE DRUM, HOISTING ENGINE OR HORSE POWER



This Derrick is similar to the No. 79, with the exception of being a stiff leg in place of guy.

PRICE LIST OF FITTINGS

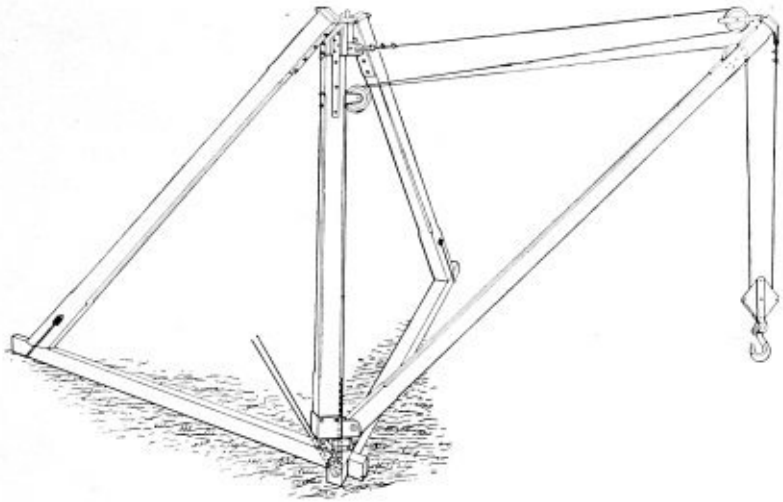
Without Timber, Rope and Boom Tackle

Description of Parts	Price "A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 American Foot Block	$12.00	$15.00	$22.00	$43.00
1 Step with Single Sheave	11.00	13.50	16.50	21.00
1 Bracket with Single Sheave	5.50	7.60	8.50	10.00
1 Flat Band with One Link	3.85	5.00	7.50	8.50
1 Plain Round Cap	1.80	2.50	3.25	4.50
1 Wrought Gudgeon	5.00	6.00	7.50	9.50
1 Flat Band with Two Links	6.00	7.80	9.00	12.00
2 Straps for Top of Legs	19.00	22.00	28.00	36.00
2 Straps for Bottom of Legs	8.00	12.00	20.00	28.00
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
1 Pin for Sheaves	.55	.65	.75	.85
1 Diamond Shell Block, Swivel Hook	13.00	16.50	25.50	35.50
Price, Total	$88.20	$111.55	$151.90	$212.85
Rope Fittings { 4 Rope Clips	$0.60	$0.70	$0.80	$0.90
Rope Fittings { 1 Thimble	.11	.13	.15	.16
Price, Complete	$88.91	$112.38	$152.85	$213.91
Sizes { Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes { Square Timber Mast at Top, inches	8x8	10x10	12x12	14x14
Sizes { Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes { Square Timber Boom at Point, inches	8x8	10x10	12x12	14x14
Sizes { Approximate Capacity, tons	3	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

STIFF LEGGED DERRICK No. 86

For Double Drum, Steam or Horse Power



This Derrick has Am. foot block; is plumb on all sides, as an offset mast top is used. This adds greatly to the appearance and assists in swinging, as the foot has a better seat.

PRICE LIST OF FITTINGS

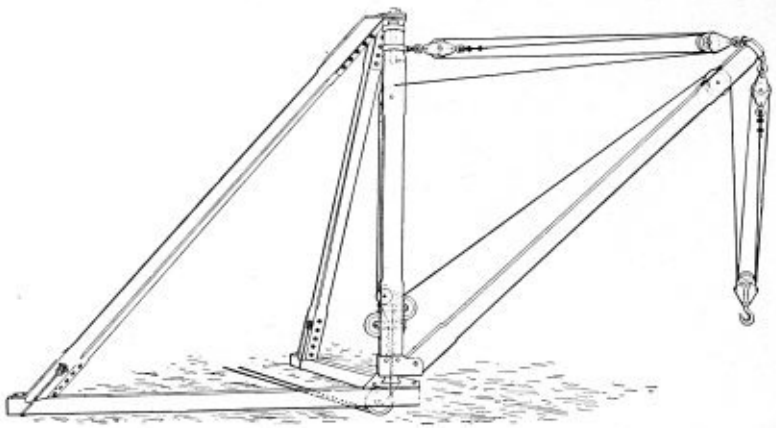
Without Timbers and Rope

Description of Parts	Price			
	"A" 10-inch Mast	"B" 12-inch Mast	"C" 14-inch Mast	"D" 16-inch Mast
1 American Foot Block	$12.00	$15.00	$22.00	$43.00
1 Step with Two Sheaves	13.50	16.50	19.50	24.50
1 Bracket with Two Sheaves	7.70	10.60	11.50	13.50
1 Mast Top with Gudgeon Offset	16.50	20.50	27.50	35.00
2 Straps for Top of Legs	19.00	22.00	28.00	36.00
2 Straps for Bottom of Legs	8.00	12.00	20.00	28.00
1 Flat Band with Two Eyes	5.00	6.50	7.50	9.80
2 Forged Shackles	1.84	3.34	5.00	7.00
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
1 Pin for Sheave	.55	.65	.75	.85
1 Diamond Shell Block, Swivel Hook	13.00	16.50	25.50	35.50
1 Clevise Block for Boom	5.50	7.00	9.25	11.50
Price, Total	$105.09	$133.59	$179.90	$248.65
Rope Fittings: 4 Rope Clips	$1.20	$1.40	$1.60	$1.80
Rope Fittings: 1 Thimble	.22	.26	.30	.32
Price, Complete	$106.51	$135.25	$181.80	$250.77
Sizes: Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes: Square Timber Mast at Top, inches	8x8	10x10	12x12	14x14
Sizes: Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes: Square Timber Boom at Point, inches	8x8	10x10	12x12	14x14
Sizes: Approximate Capacity, tons	3	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

STIFF LEGGED DERRICK No. 88

FOR DOUBLE DRUM, STEAM OR HORSE POWER



In this rig we use a regular standard foot block, both lines being carried by means of sheaves down through the center a short distance above the foot. The mast rests directly over the pivot. This style is preferred by many.

PRICE LIST OF FITTINGS

Without Timber and Rope

Description of Parts	Price			
	"A" 10 in. Mast	"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast
1 Standard Foot Block	$11.50	$14.50	$21.00	$42.00
1 Step with Two Sheaves	13.50	16.50	19.50	24.50
1 Flat Band with One Link	3.85	5.00	7.50	8.50
1 Plain Round Cap	1.80	2.50	3.25	4.50
1 Wrought Gudgeon	5.00	6.00	7.50	9.50
1 Flat Band with Two Links	6.00	7.80	9.00	12.00
2 Double Straps for Top of Legs	30.00	38.00	48.00	60.00
2 Straps for Bottom of Legs	8.00	12.00	20.00	28.00
2 Knee Straps for Bottom of Legs	12.00	14.00	16.00	20.00
2 Sheaves with Boxes for Centre of Mast	12.00	13.50	15.00	18.00
1 P. B. B. Sheave for Centre of Mast	2.20	2.50	3.00	3.40
1 P. B. B. Sheave for Top of Mast	2.50	3.00	3.40	4.00
1 P. B. B. Sheave for Point of Boom	2.50	3.00	3.40	4.00
3 Pins for Sheaves	1.75	2.05	2.35	2.66
2 Single Blocks with Shackles	19.00	24.00	42.00	60.00
1 Double Block with Shackles	13.50	17.50	27.00	35.00
1 Swivel Hoisting Block, Double	15.00	19.25	27.50	35.50
Price, Total	$160.10	$201.10	$275.40	$371.56
Rope Fittings { 4 Clips	$1.20	$1.20	$1.40	$1.60
Rope Fittings { 2 Thimbles	.22	.22	.26	.30
Price, Complete	$161.52	$202.52	$277.06	$373.46
Sizes { Square Timber Mast at Bottom, inches	10x10	12x12	14x14	16x16
Sizes { Square Timber Mast at Top, inches	8x8	10x10	12x12	14x14
Sizes { Square Timber Boom at Bottom, inches	8x10	10x12	12x14	14x16
Sizes { Square Timber Boom at Point, inches	8x8	10x10	12x12	14x14
Sizes { Approximate Capacity, tons	3	6	10	15

Capacities are approximate only, and do not apply to very long mast and boom.

GUY DERRICK No. 92

With Rooster and Bull Wheel, Operated by a Double Drum Hoisting Engine, with Swinging Gear Attachment

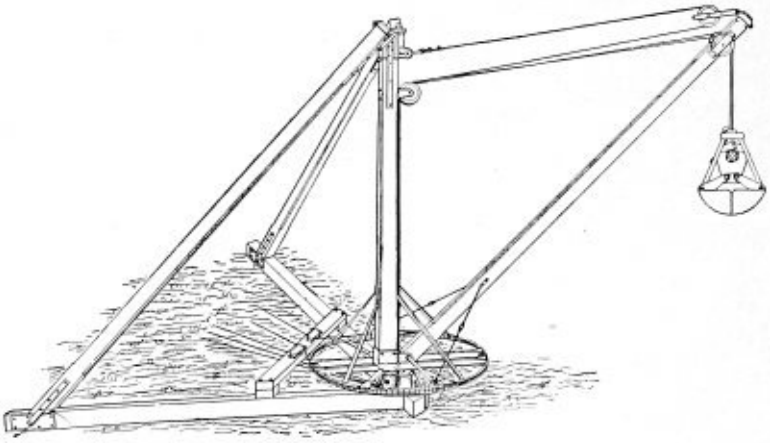
This Derrick has a bull wheel attached to the mast for swinging the boom. The ropes for operating are carried by means of sheaves either to an additional drum on the engine, or to a separate engine, as desired. Two rods are attached from the rim of the wheel to the boom, which transmits all the power of the wheel to the part it is desired to turn. By means of this device the efficiency of the Derrick is increased fifty per cent, and the entire operation of raising and lowering the boom and load, and swinging, can be performed by one man.

PRICE LIST OF FITTINGS — Without Timber and Rope

Description of Parts		Price			
		"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast	"E" 18 in. Mast
1 Standard Foot Block		$14.50	$21.00	$42.00	$45.00
1 Step with Single Sheave		11.00	13.50	16.00	24.00
1 Mast Top with Rooster and Guy Cap		69.00	85.50	110.50	140.00
2 Side Straps for Foot of Boom		6.00	10.00	12.00	17.50
1 Sheave and Boxes for Centre of Mast		6.75	7.50	9.00	11.50
1 P. B. B. Sheave for Point of Boom		3.00	3.40	4.00	4.00
1 Boom Band with Straps and Sheave Pin		17.00	20.00	23.25	23.25
2 Single Sheave Strap Blocks		14.00	18.50	23.00	30.00
1 Heavy Diamond Shell Block with Swivel Hook		19.00	27.50	35.50	49.00
1 Steel Bull Wheel		110.00	130.00	160.00	200.00
2 Sheaves with Guard		10.50	14.00	14.00	18.00
Price, Total		$280.75	$350.90	$449.25	$562.25
Rope Fittings	15 Guy Clips	$6.75	$7.50	$9.75	$9.75
	8 Hoisting Rope Clips	2.40	3.20	3.60	3.60
	9 Thimbles	1.29	1.62	2.29	2.29
Price, Complete		$291.19	$363.22	$464.89	$577.89
Sizes	Square Timber Mast at Bottom, inches	12x12	14x14	16x16	18x18
	Square Timber Mast at Top, inches	10x10	12x12	14x14	16x16
	Square Timber Boom at Bottom, inches	10x12	12x14	14x16	16x18
	Square Timber Boom at Point, inches	10x10	12x12	14x14	16x16
	Approximate Capacity, Tons	6	10	15	20

Capacities are approximate only, and do not apply to very long mast and boom.

CLAM SHELL DERRICK

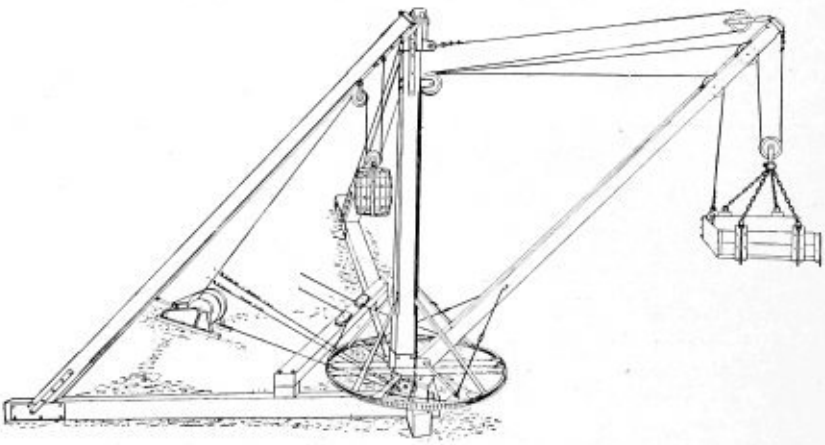


No. 93

Quotation on Fittings given on receipt of the following information: Length of Boom; if Derrick is Guy or Stiff Leg; size of Bucket required or amount of material to be handled per hour.

We show one method of rigging for a clam shell or orange peel bucket. All the lines are carried to one engine; the entire operation is easily performed by one man.

STIFF LEG DERRICK WITH TRIPPING ATTACHMENT



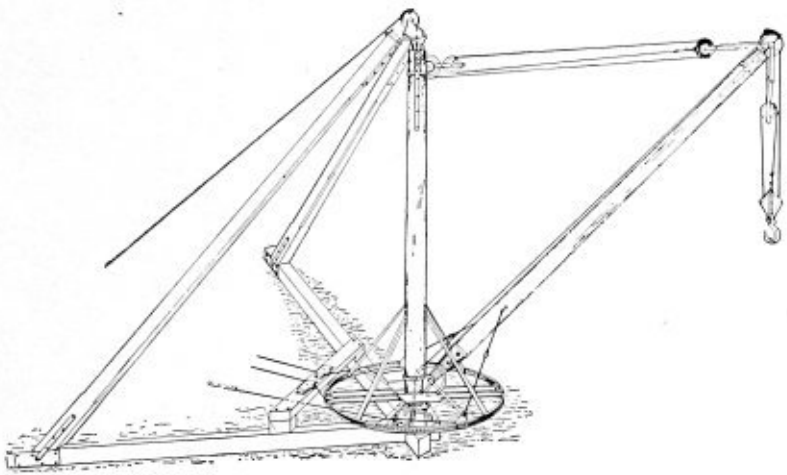
No. 94

Price on application. State Length of Boom and Capacity of Skip.

We show here the new tripping device for dumping loads. With this the dumping line is attached to the rear of the skip and runs directly to the drum. The drum, being operated automatically by the weight, draws in the slack as the skip is raised. When the skip is in position for dumping, the operator, by means of a foot brake, holds the tripping line and releases the load line, thereby dropping the mouth of the skip. After load is dumped, by releasing the brake, the skip resumes its loading position.

STIFF LEG DERRICK, No. 95

With Rooster and Bull Wheel



This illustration shows one of the best Stiff Leg Derricks. In addition to the Rooster and Bull Wheel, it is equipped with the improved foot block, boom socket and boom point. The advantages of this Derrick are as follows: The load line being carried to a point beyond the boom itself, a greater effective radius is reached, and by the use of these fittings, full strength of the timber is secured.

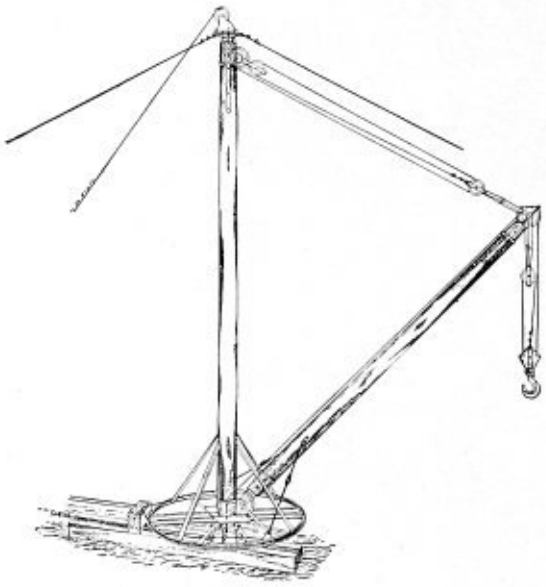
PRICE LIST OF FITTINGS

Description of Parts		Price			
		"B" 12 in. Mast	"C" 14 in. Mast	"D" 16 in. Mast	"E" 18 in. Mast
1 Improved Foot Block, Boom Socket and Step, with Base Casting		$98.00	$123.00	$163.00	$205.00
1 Bull Wheel		110.00	130.00	160.00	200.00
2 Sheaves with Guard		10.50	14.00	14.00	18.00
1 Mast Top with Rooster, and Top Stiff Leg Straps		80.00	107.00	142.00	206.00
1 Boom Point with Bails and Sheaves		56.00	67.50	91.50	119.00
2 Bottom Stiff Leg Straps		24.00	40.00	40.00	48.00
1 Swivel Hoisting Block		19.00	27.50	35.50	49.00
Price, Total		$397.50	$509.00	$646.00	$845.00
Rope Fittings	4 Clips	$1.40	$1.40	$1.60	$1.60
	2 Thimbles	.30	.30	.32	.32
Price, Complete		$399.20	$510.70	$647.92	$846.92
Sizes	Mast at Bottom, Diameter, inches	12	14	16	18
	Mast at Top, Diameter, inches	10	12	14	16
	Boom at Bottom, Diameter, inches	10	12	14	16
	Boom at Point, Diameter, inches	10	12	14	16
	Approximate Capacity, tons	6	10	15	20

Capacities are approximate only, and do not apply to very long mast and boom.

GUY DERRICK No. 96

With Rooster and Bull Wheel



This Derrick is a duplicate of the No. 95 with the exception of being a Guy Derrick.

PRICE LIST OF FITTINGS

Description of Parts		Price "B" 12 in. Mast	Price "C" 14 in. Mast	Price "D" 16 in. Mast	Price "E" 18 in. Mast
1 Improved Foot Block, Boom Socket and Step, with Base Casting		$98.00	$123.00	$163.00	$205.00
1 Bull Wheel		110.00	130.00	160.00	200.00
2 Sheaves with Guard		10.50	14.00	14.00	18.00
1 Mast Top with Rooster and Guy Cap		69.00	85.50	110.50	140.00
1 Boom Point with Bails and Sheaves		56.00	67.50	91.50	119.00
1 Swivel Hoisting Block		19.00	27.50	35.50	49.00
Price, Total		$362.50	$447.50	$574.50	$731.00
Rope Fittings	15 Guy Clips	$6.75	$7.50	$9.75	$9.75
	4 Hoisting Rope Clips	1.20	1.60	1.80	1.80
	7 Thimbles	.97	1.30	1.97	1.97
Price, Complete		$371.42	$457.90	$588.02	$744.52
Sizes	Mast at Bottom, Diameter, inches	12	14	16	18
	Mast at Top, Diameter, inches	10	12	14	16
	Boom at Bottom, Diameter, inches	10	12	14	16
	Boom at Point, Diameter, inches	10	12	14	16
	Approximate Capacity, tons	6	10	15	20

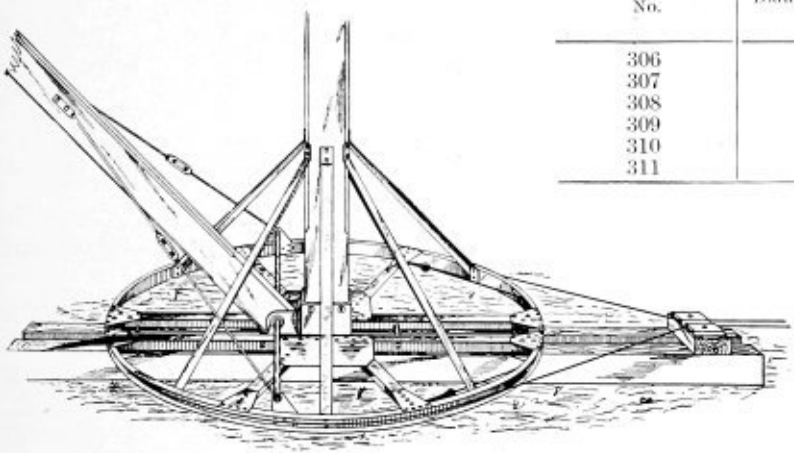
Capacities are approximate only, and do not apply to very long mast and boom.

BULL WHEELS

On this page we illustrate two types of Bull Wheels. Both are made in two pieces and are easily attached to derrick after mast and boom are in place and rigged.

STEEL

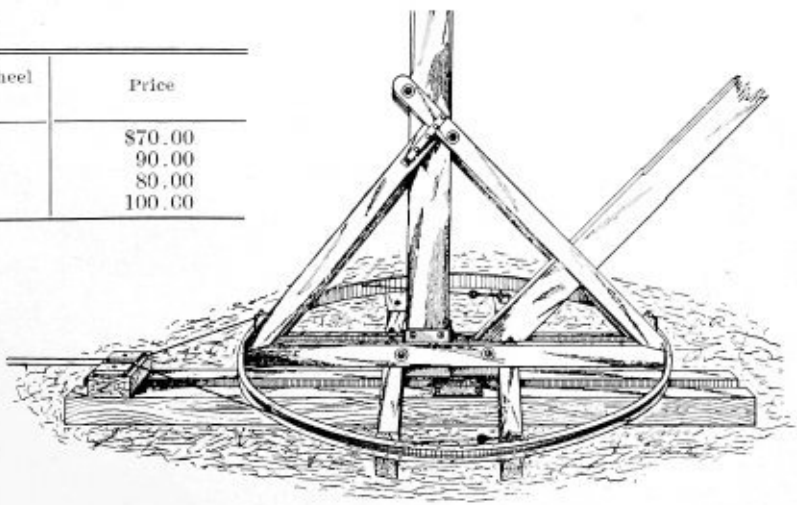
No.	Diameter of Wheel feet	Price
306	5	$90.00
307	8	100.00
308	10	110.00
309	12	130.00
310	14	160.00
311	16	200.00



This Bull Wheel is constructed entirely of steel with steel braces to mast, and rods from rim to boom, making it very rigid, durable and easily attached. The rods apply the strain of the ropes directly to the boom, thereby avoiding any tendency to twist and break the derrick.

WOOD

No.	Diameter of Wheel feet	Price
313	8	$70.00
314	10	90.00
315	12	80.00
316	14	100.00



The Wood Wheel is constructed with a steel rim, it is cheaper than the steel, however, for a derrick that is moved frequently it is preferable. No rods are used in this wheel as the braces are arranged so as to act directly against the boom. With this type it is unnecessary to cut or bore either mast or boom.

Price is for Bull Wheel only, and does not include foot block, guide sheaves or timber, in mast, boom and stringers.

DERRICK CASTINGS

Improved Foot Block, Boom Socket and Step, with Base Casting. Complete

No.	Size	Diam. Inside for Mast Inches	Diam. Inside for Boom Inches	Price
319	B	12	10	$98.00
320	C	14	12	123.00
321	D	16	14	163.00
322	E	18	16	205.00
323	F	22	20	266.00
324	G	26	24	354.00

For price of above, fitted with two sheaves in base and two sheaves on boom pin, add: Size B, $8.50; C, $9.50; D, $11.25; E, $16.00; F, $23.50; G, $36.50.

PARTS OF IMPROVED FOOT BLOCK

No.	Size	Diam. Inside	Price
329	B	12	$30.00
330	C	14	40.00
331	D	16	53.00
332	E	18	65.00
334	F	22	85.00
335	G	26	110.00

No.	Size	Price
369	B	$4.00
370	C	6.00
371	D	8.00
372	E	10.00
374	F	13.00
375	G	16.00

No.	Size	Diam. Inside	Price
340	B	10	$25.00
341	C	12	31.00
342	D	14	42.00
343	E	16	54.00
345	F	20	70.00
346	G	24	92.00

No.	Size	Price
380	B	$30.00
381	C	36.00
382	D	48.00
383	E	60.00
385	F	75.00
386	G	100.00

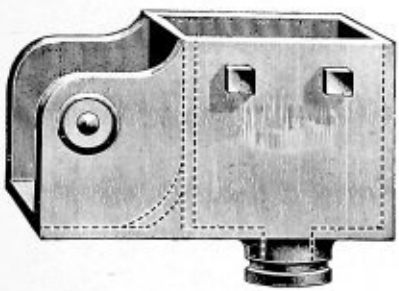
No.	Size	Diam.	Price
351	B	22	$5.50
352	C	24	6.50
353	D	26	7.50
354	E	28	12.00
356	F	36	18.00
357	G	44	30.00

No.	Size	Diam.	Price
391	B	14	$3.00
392	C	14	3.00
393	D	16	3.75
394	E	18	4.00
396	F	22	5.50
397	G	24	6.50

DERRICK CASTINGS

We illustrate three different types of regular foot blocks. In all of these the ropes are carried through the pivot. Lugs not shown are now cast on to receive bull wheels if it is desired to use them. All the foot blocks are more than equal in strength to the timber for which they are intended.

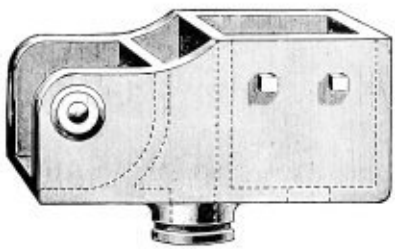
STANDARD FOOT BLOCK



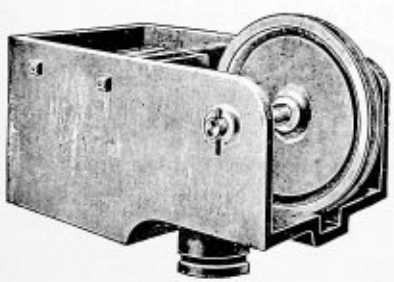
No.	Size	Inside Measure in Inches		Price
		Mast	Boom	
409	A	7½	5½	$10.00
410	A	8	8	11.50
411	A	10	8	11.50
411½	B	10	10	14.00
412	B	12	10	14.50
412½	†B	12	10	16.50
412¾	C	12	12	20.00
413	C	14	12	21.00
413½	D	15	15	26.50
414	*D	16	14	26.50
415	D	16	14	42.00
416	E	18	16	45.00

* Light. † Heavy.

AMERICAN FOOT BLOCK



No.	Size	Inside Measure in Inches		Price
		Mast	Boom	
416½	A	8	8	$12.00
417	A	10	8	12.00
418	B	12	10	15.00
418½	†B	12	10	20.00
419	C	14	12	22.00
420	†C	14	12	34.00
421	D	16	14	43.00
422	E	18	16	50.00



COMBINATION FOOT BLOCK

No.	Size	Inside Measure in Inches		Price with Sheave
		Mast	Boom	
423	B	12	12	$30.00
424	C	14	14	40.00
425	D	16	16	54.00

DERRICK CASTINGS

We illustrate various types of steps. Plain for hand power or with one or more sheaves for power. The rectangular steps are usually used on parallel sills and the triangular on sills of stiff leg derricks.

SINGLE SHEAVE STEP WITH BASE FOR FOOT BLOCKS No. 411-430

No.	Size	Diam. Sheave inches	Price
466	A	12	$32.50
467	B	14	38.50
468	C	14	46.50
469	D	16	62.00
470	E	18	80.00

DOUBLE SHEAVE STEP WITH BASE FOR FOOT BLOCKS No. 411-430

No.	Size	Diam. Sheave inches	Price
471	A	12	$35.00
472	B	14	41.50
473	C	14	49.50
474	D	16	66.00
475	E	18	84.00

SINGLE SHEAVE STEP FOR FOOT BLOCKS No. 411-430 Especially Adapted for Stiff Leg Sills

No.	Size	Diam. Sheave inches	Price
476	A	12	$11.00
477	B	14	13.50
478	C	14	16.50
479	D	16	21.00
480	E	18	31.00

DOUBLE SHEAVE STEP FOR FOOT BLOCKS No. 411-430 Especially Adapted for Stiff Leg Sills

No.	Size	Diam. Sheave Inches	Price
481	A	12	$13.50
482	B	14	16.50
483	C	14	19.50
484	D	16	24.50
485	E	18	35.00

BOX CASTING

No.	Size	Inside Measure in inches	Price
426	AA	8x 8	$5.00
427	A	9x 9	6.00
428	B	10x10	7.50
429	C	12x12	10.00
430	D	14x14	13.50

BOOM SEAT CASTING

No.	Size	Inside Measure in inches	Price
431	AA	6	$4.00
432	A	8	5.00
433	B	10	7.00
434	C	12	9.50
435	D	14	12.00

PLAIN STEP

No.	Size	Price
486	A	$4.00
487	B	4.50
488	C	6.50
489	D	8.50
490	E	14.00

STEP WITH SINGLE SHEAVE

No.	Size	Diam. Sheave inches	Price
491	A	12	$9.00
492	B	14	11.00
493	C	14	13.50
494	D	16	16.00
495	E	18	24.00

STEP WITH TWO PARALLEL SHEAVES

No.	Size	Diam. Sheave inches	Price
496	A	12	$11.50
497	B	14	14.00
498	C	14	16.50
499	D	16	19.50
500	E	18	28.00

All sheaves in our standard fittings have phosphor bronze bushings unless otherwise ordered.

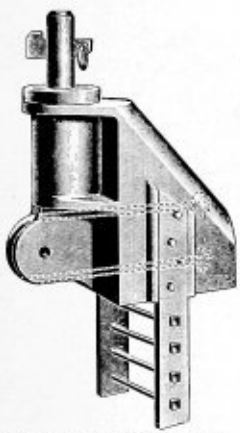
DERRICK CASTINGS

BOOM POINT
With Balls and Sheaves

No.	Size	Diam. Inside inches	Diam. of Sheaves inches	Price
526-T	A	8	12 and 16	$46.00
527-T	B	10	14 and 18	56.00
528-T	C	12	14 and 22	67.50
529-T	D	14	16 and 24	91.50
530-T	E	16	18 and 26	119.00
531-T	F	18	20 and 28	136.00
532-T	G	20	22 and 30	156.00
533-T	H	24	24 and 36	214.00

MAST TOPS
With Off-Set Gudgeon and Side Straps

No.	Size	Inside Measure inches	Price
506	A	8	$16.50
507	B	10	20.50
508	C	12	27.50
509	D	14	35.00
510	E	16	46.00



With Off-Set Gudgeon and Side Straps

With Rooster and Guy Cap

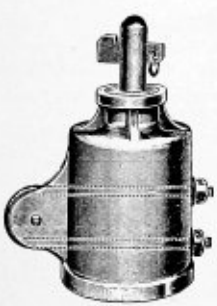
No.	Size	Diameter Inside of Cap	Price
525-X	A	10	$57.00
526-X	B	12	69.00
527-X	C	14	85.50
528-X	D	16	110.50
529-X	E	18	140.00
530-X	F	20	180.00
531-X	G	24	238.00

With Rooster and Stiff Leg Straps

No.	Size	Diam. Inside of Cap inches	Cat. No. of Stiff Leg Straps	Price
525-R	A	10	607	$66.50
526-R	B	12	608	80.00
527-R	C	14	609	107.00
528-R	D	16	610	142.00
529-R	E	18	602½	206.00
530-R	F	20	603	267.00
531-R	G	24	604	342.00

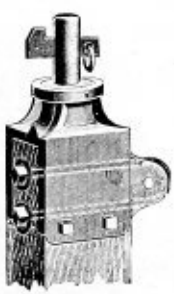
With Rooster and Stiff Guy Cap

Stiff Leg Straps may be substituted for the Guy Plates.



Round

No.	Size	Inside Measure inches	Price
511	A	8	$12.00
512	B	10	15.00
513	C	12	21.00
514	D	14	27.00
514½	E	16	36.00



Square

No.	Size	Inside Measure Inches	Price
515	A	8	$12.00
516	B	10	15.00
517	C	12	21.00
518	D	14	27.00
519	E	16	36.00

DERRICK CASTINGS AND FORGINGS

GUY CAP WITH LINKS

The wrought iron rim on this guy cap is shrunk on the cast iron plate.

No.	Size	Number of Guys	Diameter of Mast at Top, inches	Price
533	A	4	8	$6.00
534	B	4	10	7.80
535	A	5	8	6.50
536	B	5	10	8.30
537	C	5	12	10.00
538	D	6	14	13.50
539	E	6	16	16.50
540	E	8	16	19.50

GUY CAP WITHOUT LINKS

This guy cap is made with a wrought iron band.

No.	Size	Number of Guys	Diameter of Mast at Top, inches	Price
541	A	4	8	$4.25
542	B	4	10	6.00
543	A	5	8	4.50
544	B	5	10	6.25
545	C	5	12	7.00
546	D	6	14	8.00
547	E	6	16	11.00
548	E	8	16	13.00

TWO LINK GUY STRAP

No.	Size of Iron	Price
575	5 x 3/8	$5.25
576	6 x 1	6.00
577	6 x 1 1/4	8.00

WROUGHT GUDGEON

No.	Size	Diameter inches	Price
582	AA	2	$4.20
583	A	2 1/4	5.00
584	B	2 1/2	6.00
585	C	2 3/4	7.50
586	D	3	9.50
587	E	3 1/2	12.00
588	E	4	15.00

STEEL GUY CAP WITH AND WITHOUT LINKS

This guy cap is constructed of 2 plates of steel dished and bored to receive cast iron center and securely riveted together. The cast iron center increases the bearing on the gudgeon and reduces the wear.

No.	Size	Number of Guys	Diam. of Mast at Top, ins.	Price without Links	Price with Links
549	A	4	8	$11.00	$16.00
550	B	4	10	11.50	16.50
551	A	5	8	11.50	17.50
552	B	5	10	12.00	18.00
553	C	5	12	13.00	21.00
554	D	6	14	14.50	23.50
555	E	6	16	16.50	26.50
556	E	8	16	17.00	30.00
557	E	10	16	18.00	34.00

PLAIN CAP FOR TOP OF MAST

No.	Size	Inside Measure inches	Price
558	AA	7 1/2	$1.80
559	A	8 1/2	2.00
560	B	9 1/2	2.50
561	C	11 1/2	3.25
562	D	13 1/2	4.50
562 1/2	E	15 1/2	7.50

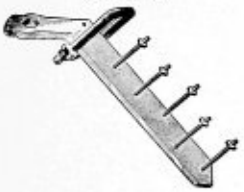
HEAVY FORGED SHACKLE

No.	Size Iron	Price	No.	Size Iron	Price
563	1/2	$0.35	568	1 3/8	$2.25
563 1/2	5/8	.40	569	1 1/2	2.50
564	3/4	.46	570	1 3/4	3.50
564 1/2	7/8	.60	571	2	4.00
565	1	.92	572	2 1/4	7.00
566	1 1/8	1.25	573	2 1/2	10.00
567	1 1/4	1.67	574	3	15.00

DERRICK FORGINGS

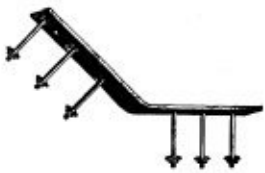
All the forgings are heavy; the welding in every case being equal in strength to the rest of the stock.

TOP STIFF LEG STRAP SINGLE

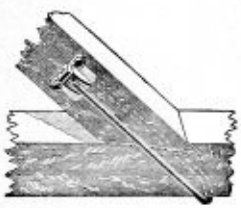


No.	Size of Iron	Price
605	5x 7/8	$8.00
606	6x1	9.50
607	6x1 1/4	11.00
608	6x1 1/2	14.00
609	8x1 1/2	18.00
610	10x1 1/2	24.00
611	12x1 1/2	30.00

STIFF LEG KNEE



BOTTOM STIFF LEG STRAP

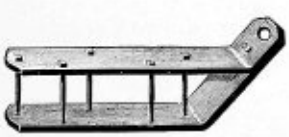


No.	Size of Iron	Width of Sill	Price
612	1	6	$2.50
613	1 1/8	8	4.00
614	1 1/4	10	6.00
615	1 1/2	12	10.00
616	1 3/4	12	14.00

LOWER IRONS FOR LEG AND SILL

No.	Size of Timbers	Price
624	8	$9.00
625	10	12.00
626	12	20.00
627	14	24.00
628	16	35.00

TOP STIFF LEG STRAP, DOUBLE



No.	Size of Timber	Size of Iron	Price, as per Cut	Price with Welded Eye
592	8	7x 3/4	$15.00	$17.00
593	10	7x 3/4	16.00	18.00
594	10	7x1	19.00	21.00
595	12	8x1	24.00	27.00
596	12	8x1 1/4	30.00	33.00

TOP STIFF LEG STRAP, SINGLE EXTRA HEAVY

No.	Size of Iron at Bend	Thickness through Eye	Price
601 1/2	6x3	1 1/2	$30.00
602 1/2	8x3	1 1/2	42.50
603	10x3	1 3/4	55.00
604	10x4	2	67.00

DERRICK FORGINGS

PLAIN FLAT BAND

No.	Size	Diam. Inside inches	Price
630	AA	7½	$2.00
631	A	8½	2.10
632	B	9½	2.25
633	C	11½	3.00
634	D	13½	4.00
635	E	15½	5.50

FLAT BAND WITH ONE D LINK

No.	Size	Diam. Inside inches	Price
653	AA	8	$2.70
654	A	9	3.00
655	B	10	3.60
656	C	12	4.50
657	D	14	5.50

FLAT BAND WITH ONE EYE

No.	Size	Diam. Inside inches	Price
636	AA	8	$3.35
637	A	9	3.50
638	B	10	4.30
639	C	12	6.25
640	D	14	6.90
641	E	16	9.00

FLAT BAND WITH TWO D LINKS

No.	Size	Diam. Inside inches	Price
658	AA	8	$3.50
659	A	9	3.80
660	B	10	4.40
661	C	12	5.30
662	D	14	6.30

FLAT BAND WITH ONE EYE AND LINK

No.	Size	Diam. Inside inches	Price
642	AA	8	$3.85
643	A	9	4.00
644	B	10	5.00
645	C	12	7.50
646	D	14	8.50
647	E	16	11.00

FLAT BAND WITH TWO EYES

No.	Size	Diam. Inside inches	Price
663	AA	8	$5.00
664	A	9	5.75
665	B	10	6.50
666	C	12	7.50
667	D	14	9.80

FLAT SPLIT BAND WITH ONE LINK

No.	Size	Diam. Inside inches	Price
648	AA	8	$5.20
649	A	9	5.50
650	B	10	7.00
651	C	12	8.50
652	D	14	10.00

FLAT BAND WITH TWO EYES AND LINKS

No.	Size	Diam. Inside inches	Price
668	AA	8	$6.00
669	A	9	6.75
670	B	10	7.80
671	C	12	9.00
672	D	14	12.00

All the forgings are heavy, the welding in every case being equal in strength to the rest of the stock.

DERRICK FORGINGS

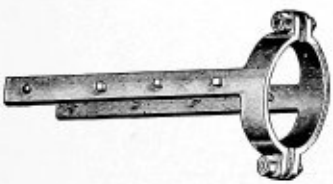
FLAT SPLIT BAND WITH TWO LINKS

No.	Size	Diameter Inside inches	Price
673	AA	8	$7.80
674	A	9	8.25
675	B	10	10.00
676	C	12	11.75
677	D	14	14.00

ROUND IRON BOOM BAND

No.	Size	Diameter of Boom at Point	Price
678	AA	8	$3.60
679	A	9	3.75
680	B	10	4.00
681	C	12	5.00
682	D	14	6.00

FLAT SPLIT BOOM BAND WITH WELDED EXTENSION TO SHEAVE PIN



No.	Size	Diameter Inside inches	Price
683	AA	8	$13.00
684	A	9	14.50
685	B	10	17.00
686	C	12	20.00
687	D	14	23.25

PLAIN STEEL PIN WITH KEYS, $1\frac{1}{4}$ INCHES DIAMETER

No.	Length between Keys, inches	Price
710	3	$0.48
711	$3\frac{1}{2}$	.49
712	4	.50
713	$4\frac{1}{2}$	.52
714	5	.53
715	$5\frac{1}{2}$	.54
716	6	.55
717	7	.58
718	8	.60
719	9	.65
720	10	.70
721	11	.75
722	12	.80
723	13	.85
724	14	.90
725	16	1.00

STEEL PINS WITH SQUARE END, $1\frac{1}{4}$ INCHES DIAMETER

No.	Length over All inches	Price
726	8	$0.55
727	9	.60
728	10	.65
729	11	.70
730	12	.75
731	13	.80
732	14	.85
733	16	.96

STEEL PINS WITH ROUND HEADS, $1\frac{1}{4}$ INCHES DIAMETER

No.	Length between Head and Key inches	Price
734	8	$0.73
735	9	.78
736	10	.83
737	11	.88
738	12	.93
739	13	.98
740	14	1.04
741	16	1.14

All the forgings are heavy, the welding in every case being equal in strength to the rest of the stock.

DERRICK FORGINGS

TRUSS ROD

No.	Diameter of Rod inches	Length of Rod feet	Price with Strut
767	¾	25	$14.00
768	¾	35	15.00
769	¾	45	16.00
770	¾	55	17.00
771	⅞	25	15.00
772	⅞	35	16.50
773	⅞	45	18.00
774	⅞	55	19.50
775	⅞	65	21.00
776	1	35	19.00
777	1	45	21.00
778	1	55	23.00
779	1	65	25.00

DECK PLATE WITH BOOM SEAT

Our deck plate is very convenient to use on boats, docks, or places where space is limited. Having machine bearings, it is very easy to operate.

No.	Size of Boom inches	Price
1770	8	$28.00
1771	10	34.00
1772	12	42.00

MAST AND GAFF FITTING

Round

No.	Diameter of Mast inches	Price
780	6	$20.00
781	8	23.00
782	9	28.00

CLEAT

No.	Length inches	Price
1780	15	$1.80

MAST AND GAFF FITTINGS—SQUARE

No.	Width of Bracket inches	Size of Jib inches	Price
784	6	6	$12.00
785	9	8	16.00
786	12	10	20.00

The mast and gaff fittings are for use on a rigid mast, or on corners and sides of buildings where a mast is not desired.

DERRICK FITTINGS

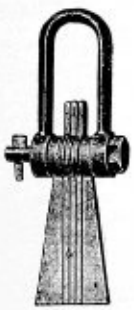
STONE GRAB HOOKS

To Lift tons	Size of Steel	Distance "S" inches	Length of Chain feet	Size of Chain inches	Price of 2 Hooks without Chain	Price of Hooks and Chain Complete
2	½x2½	7	10	½	$10.00	$15.50
6	1x3	8	14	⅝	16.00	25.00
10	1x4	10	16	¾	21.00	36.00
15	2x4	10	18	⅞	29.50	49.00
20	2x5	11	20	1	36.00	61.00

The steel in these hooks is a special grade of tough uniform steel.

The chain is the finest grade of B. B. Crane Chain, with short links.

For Chain and Fiittings, see pages 61 to 63.



LEWISES

Capacity tons	Price Each
2	$5.50
3	6.00
5	7.50
7	11.00
10	16.00

BEAM CLAMPS

Capacity tons	Maximum Size of I Beam inches	Price Each
1	10	$10.00
2	15	12.00
3	20	15.00

STONE TONGS

Capacity pounds	Price Each
1500	$8.00
2500	10.00
4000	12.00
6000	16.00

Heavier Lewises, Clamps, and Stone Tongs to order. Prices on application.

ROPE FITTINGS

Guy tighteners are a great advantage, as with them guys can be kept taut without removing the fasteners.

GUY TIGHTENER WITH SHEAVE

No.	Diameter Screw	Take Up, inches	Price
1843	1	72	$8.00
1844	1¼	72	10.00
1845	1½	72	13.50
1846	2	72	18.00

GUY SHACKLE WITH SHEAVE

No.	Size Shackle	Diameter Sheave	Price
1847	1	5	$1.25
1848	1¼	6	2.25
1849	1½	8	3.50

GUY TIGHTENERS

No.	Diameter Screw	Take Up, inches	Price
1851	¾	30	$3.60
1852	⅞	30	4.50
1853	1	30	5.40
1854	1¼	30	7.80
1855	1	72	9.60
1856	1¼	72	12.00
1857	1½	72	17.00

LASHING RINGS AND SHACKLES

For Use with Manila Rope in Hoisting

Lashing Rings

Lashing Rings

No.	Sizes of Iron	Width Inside inches	Price
1990	1⅛	8	$3.50
1991	1¼	10	4.50
1992	1½	12	6.00

Lashing Shackles

No.	Sizes of Iron	Width Inside inches.	Price
1995	1⅛	8	$6.00
1996	1¼	10	7.00
1997	1½	12	9.00

Lashing Shackles

DERRICK SHEAVES

SHEAVE WITH GUARD
P. B. B. Sheaves

No.	Diameter of Sheave	Price
4758	8	$4.00
4759	10	5.25
4760	12	7.00
4761	14	9.00
4762	16	11.00

BALE WITH SHEAVE
P. B. B. Sheaves

No.	Diameter of Sheave	Price
4755	12	$10.00
4756	14	11.00
4757	16	12.50

GUIDE SHEAVES

DOUBLE SHEAVE CHOCK

For Manila Rope

No.	Size of Sheaves	Price
4015	6 x 3	$10.00

SINGLE GUIDE SHEAVE

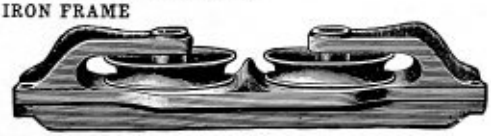
The Small Guard Sheave can be put in three positions for different leading angles. It prevents the rope from getting out of the sheave groove.

No.	Diameter of Sheave	Price
4055	10	$10.50
4056	12	12.50
4057	14	15.00

CAR PULLER LEAD SHEAVES

IN CAST IRON FRAME

Single



Double

These Sheaves are made of cast iron, heavy pattern; the groove is very deep and machine turned. They run loose on a steel pin that is securely attached to a well proportioned, heavy cast iron frame. The grooves are made for single or double sheaves, as desired.

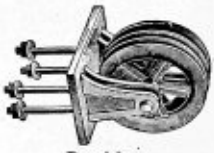
Price List

Style	Diameter of Sheaves, inches	Price	Style	Diameter of Sheaves, inches	Price
Single	9	$6.25	Single	18	$28.00
"	12	13.00	Double	18	55.00
Double	12	26.00	"	24	120.00

DERRICK SHEAVE BRACKETS

P. B. B. SHEAVES

Single



Double

Size of Sheaves	No. Single	Price	No. Double	Price
8x1½x1¼	4791	$5.00	4780	$7.00
8x2 x1¼	4792	6.30	4781	8.20
10x1½x1¼	4793	5.50	4782	7.70
10x2 x1¼	4794	6.60	4783	8.80
12x1½x1¼	4795	6.00	4784	8.40
12x2 x1¼	4796	7.60	4785	10.60
14x1½x1¼	4797	6.50	4786	9.50
14x2 x1¼	4798	8.50	4787	11.50
16x1½x1¼	4799	7.50	4788	11.00
16x2 x1¼	4800	10.00	4789	13.50
16x2 x1½	4801	11.00	4790	15.50

SHEAVE AND BOXES, FOR CENTER OF MAST

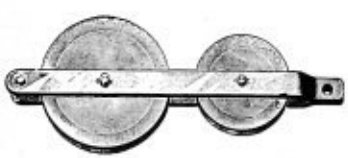
P. B. B. SHEAVES

No.	Diam. Sheaves, inches	Price
4806	10	$5.50
4807	12	6.00
4808	14	6.75
4809	16	7.50
4810	18	9.00
4811	20	11.00
4812	24	15.00

DOUBLE STRAP BLOCK

TANDEM

P. B. B. SHEAVES



No.	Diam. Sheaves, inches	Price
4816	8 and 12	$11.00
4817	8 and 14	12.00
4818	10 and 14	12.50
4819	10 and 16	13.00
4820	12 and 16	14.00
4821	12 and 18	15.50

STRAP BLOCKS

P. B. B. SHEAVES

Single Sheave

Double Sheave

Size Sheaves inches	Capacity tons	No. Single	Price	No. Double	Price
10	3	4825	$5.00	4851	$8.00
10	5	4826	5.50	4852	8.50
12	3	4827	5.50	4853	9.50
12	5	4828	6.25	4854	10.75
12	8	4829	7.00	4855	12.00
14	3	4830	6.25	4856	11.75
14	5	4831	7.00	4857	12.50
14	8	4832	7.75	4858	13.25
14	10	4833	8.50	4859	14.00
16	5	4834	7.75	4860	13.75
16	8	4835	8.50	4861	14.50
16	10	4836	9.25	4862	15.25
16	12	4837	10.25	4863	16.25
18	8	4838	9.25	4864	15.25
18	10	4839	10.25	4865	16.25
18	12	4840	11.50	4866	17.50
18	20	4841	15.00	4867	23.00
20	10	4842	11.00	4868	17.00
20	12	4843	12.50	4869	20.00
20	20	4844	17.50	4870	25.50

FALL LINE BALLS

BALL WITH HOOK

No.	Capacity of Hook tons	Weight pounds	Price
4887	3	73	$7.00
4888	5	86	8.00
4889	3	120	10.00
4890	5	125	11.00
4891	5	235	16.00
4892	8	242	17.00
4893	8	325	21.00
4894	12	335	23.00
4895	20	360	26.00
4896	12	535	33.00
4897	20	560	36.00
4898	30	637	55.00

PLAIN BALL

No.	Weight pounds	Price
4880	50	$4.50
4881	68	5.00
4882	105	7.50
4883	218	14.00
4884	300	20.00
4885	500	35.00

Any size to order.

WEIGHTED BLOCKS

CHEEKS OF ANY WEIGHT FOR WIRE ROPE BLOCKS

No.	Diameter Sheave	Diameter Rope	Weight on Block pounds	Price
5003	10	$\frac{1}{2}$ — $\frac{5}{8}$	100	$18.75
5005	12	$\frac{5}{8}$ — $\frac{3}{4}$	150	22.38
5007	14	$\frac{3}{4}$ — $\frac{7}{8}$	200	27.50
5009	16	$\frac{7}{8}$ — 1	250	37.88

SHEAVES WITH FIXED STEEL AXLE AND SOLID JOURNAL BOXES

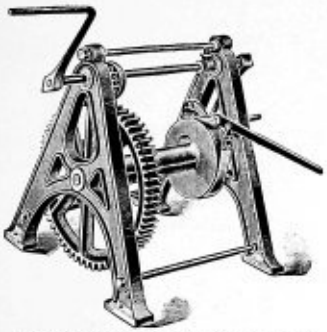
Size Sheave	For Manila Rope Diameter	Common Bushed Each	Size Sheave	For Wire Rope Diameter	Common Bushed Each
6 x 1 5/8 x 3/4	1 1/4	$1.50	6 x 1 x 3/4	1/4	$1.75
7 1/2 x 1 3/4 x 7/8	1 3/8	2.00	8 x 1 1/4 x 3/4	3/8	2.25
8 1/2 x 1 7/8 x 1	1 1/2	2.30	10 x 1 1/2 x 7/8	3/8	3.25
8 1/2 x 2 1/8 x 1	1 3/4	2.50	12 x 1 3/4 x 1	1/2 and 5/8	4.00
10 x 2 3/8 x 1 1/4	2	3.25	14 x 2 x 1 1/8	5/8 " 3/4	4.75
10 x 2 5/8 x 1 1/4	2 1/4	3.50	16 x 2 x 1 1/4	5/8 " 3/4	5.50
11 x 3 1/4 x 1 1/2	2 1/2	4.50	18 x 2 3/8 x 1 1/4	7/8 " 1	7.00
13 x 4 x 1 1/2	3	5.25	.....	.....	.....
15 x 4 1/2 x 1 1/2	3 1/2	8.00	.....	.....	.....
17 x 5 x 1 3/4	4	11.50	.....	.....	.....

EXTRA HEAVY WIRE ROPE SHEAVES

Finished Grooves. 18 inch Sheaves and Larger Have Arms

Diameter inches	Size of Rope	Diameter Bottom Groove inches	Thickness through Hub inches	Bore inches	Common Bushed Each	Self-Lubr. Bronze Bushed Each
6	1/2 to 3/4	4 1/2	1 1/2	1	$0.65	$1.35
7	1/2 to 3/4	5 1/8	1 1/2	1 1/4	.85	1.55
8	5/8 to 7/8	5 1/2	2	1 1/4	1.10	1.90
10	5/8 to 7/8	8 1/8	2	1 1/4	1.40	2.20
12	5/8 to 7/8	9 7/16	2	1 1/4	1.70	2.50
14	5/8 to 7/8	11 1/2	2	1 1/2	2.25	3.50
16	5/8 to 7/8	13 5/8	2	1 1/2	2.70	4.00
18	5/8 to 7/8	15 3/8	2	1 1/2	3.75	5.50
20	5/8 to 1	17	2 1/2	2	6.00	8.00
24	3/4 to 1 1/8	20 3/4	3	3	10.00	14.00
30	3/4 to 1 1/8	27	3 1/2	3	18.00	25.00
36	3/4 to 1 1/8	33	4	2 1/2	14.00	18.00
42	7/8 to 1 1/8	38 3/4	4 1/2	2 3/4	22.00	28.00
48	1 1/4 to 1 1/4	44	5	3	30.00	38.00

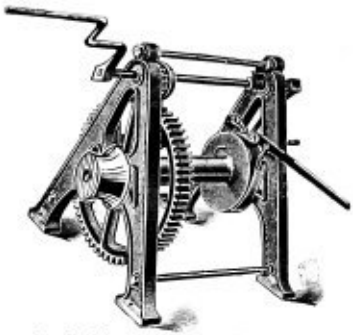
For Regular Sheaves, see pages 94 and 95.



Style No. 10, Single Purchase without Nigger Head

HOISTING WINCHES

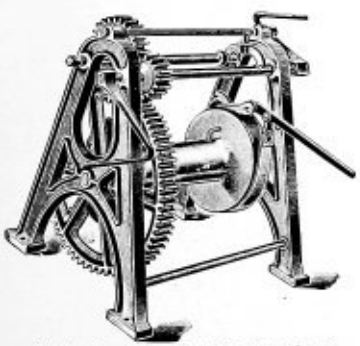
IRON FRAME WITH BRAKE



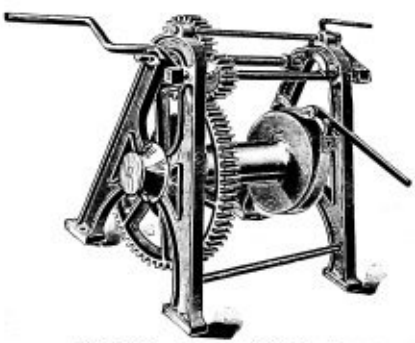
Style No. 10, Single Purchase with Nigger Head

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum inches	Diameter of Gear and Pinion	Lift of Two Men, Direct Single Line lbs.	Lift with Double and Triple Blocks Two Men lbs.	Price without Nigger Head	Price with Nigger Head	Size of Nigger Head inches
6250	4½x12	18-6	900	4,500	$29.00	$36.00	4x6
6251	4½x14	21-5¼	1,250	6,250	31.00	38.50	4x6
6252	4½x16	24-4	1,800	9,000	36.00	44.00	4x6
6253	5 x18	25-4	2,500	12,500	45.00	53.50	4x6
6254	6 x21	25-4	2,000	10,000	45.00	53.50	4x6



Style No. 11. Double Purchase without Nigger Head



Style No. 11. Double Purchase with Nigger Head

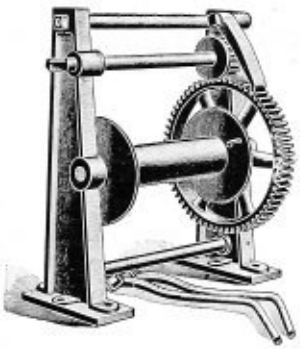
CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum inches	Diameter of Gears and Pinion	Lift of Two Men, Direct Single Line lbs.	Lift with Double and Triple Blocks Two Men lbs.	Price without Nigger Head	Price with Nigger Head	Size of Nigger Head inches
6258	4½x16	24- 9 -4	3,000	15,000	$42.00	$50.50	4x6
6259	4½x18	25- 9 -4	4,000	20,000	48.00	57.00	6x7
6260	5 x19	27-13½-4	4,500	22,500	61.00	70.50	6x7
6261	6 x21	29-12½-5	4,500	22,500	67.00	76.50	6x7
6262	6½x22	33-13½-5½	5,000	25,000	75.00	85.00	6x7
6263	9 x16	25- 8¼-4	3,000	15,000	60.00	68.50	4x6
6264	9 x21	25- 8¼-4	3,000	15,000	65.00	73.50	4x6

Extra for Machine with Wheel Brake. add $5.00 to list price.

WE CAN FURNISH THE ABOVE WITH STEEL SIDES. PRICES ON APPLICATION

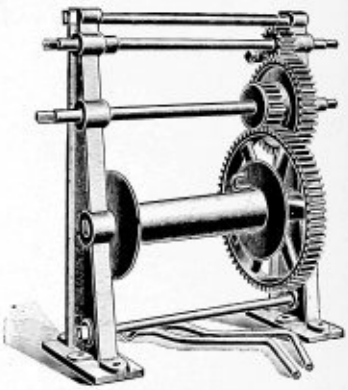
HOISTING WINCHES



No. 6288. Single Purchase

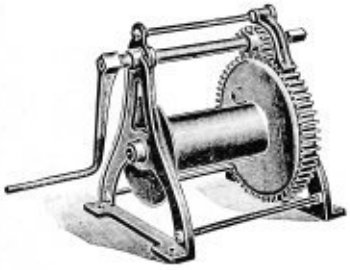
IRON FRAME WAGON WINCHES.

CAPACITY FOR FOUR MEN



No. 6289. Double Purchase

No.	Diameter and Length of Drum inches	Diameter of Gear and Pinion	Lift with One Man pounds	Capacity with Four Men pounds	Price
6288	4 x 16	16–4¼	600	2,400	$25.00
6289	4 x 16	16–9½–3	1,400	5,600	37.50



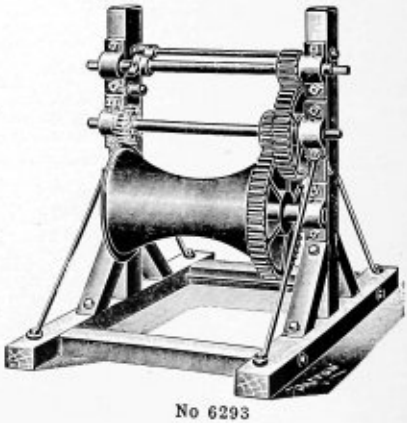
No. 6291

ONE MAN WINCH. IRON FRAME

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Price
6291	5 x 12	14 x 2½	$15.00

PORTABLE WINCH. DOUBLE GEARED WOOD FRAME

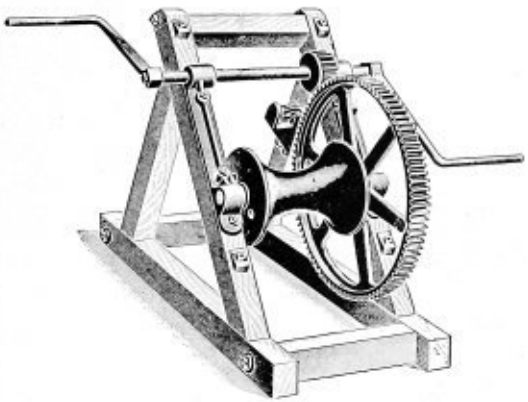
No.	Diameter and Length of Drum inches	Diameter of Gear and Pinion	Lift of Two Men Single Line pounds	Lift with Double and Triple Blocks Two Men pounds	Price
6293	4½ x 12	24–9–4	3,000	15,000	$40.00



No 6293

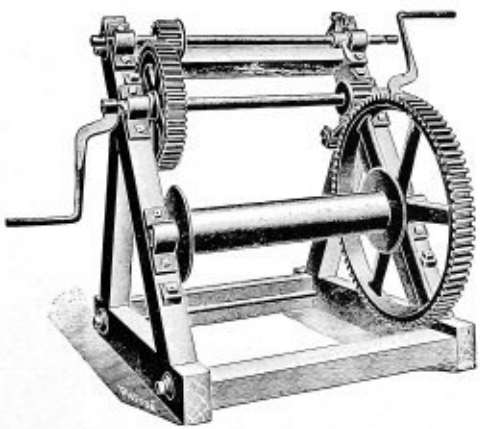
HOISTING WINCHES

WOOD FRAME



Style No. 18½ Portable Winch, Single Geared, Concave Drum. Capacity for Four Men

No.	Diameter and Length of Drum, inches	Diameter of Gear and Pinion, inches	Lift of Two Men Direct Single Line lbs.	Lift with Double and Triple Blocks, Two Men, lbs.	Price
6295	4½x12	24x4½	1,600	8,000	$25.00



Style No 16 Portable Winch, Single Drum, Double Purchase. Capacity for Four Men

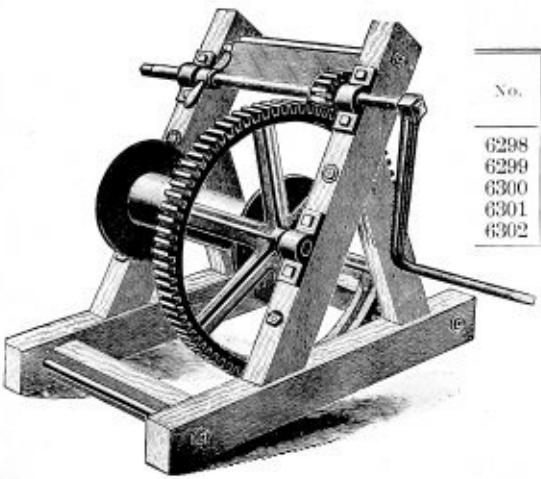
No.	Diameter and Length of Drum, inches	Diameter of Gear and Pinion, inches	Lift of Two Men Direct Single Line lbs.	Lift with Double and Triple Blocks, Two Men, lbs.	Price
6305	6x21	28-18-4	7,500	37,500	$60.00
6306	6x26	28-18-4	7,500	37,500	65.00
6307	6x30	28-18-4	7,500	37,500	70.00
6308	9x16	28-18-4	5,000	25,000	60.00
6309	9x21	28-18-4	5,000	25,000	65.00

NOTE.—Above capacities are for slow speed. Fast speed will lift one-quarter the load.

HOISTING WINCHES

Wood Frame

Style No. 18. Portable Winch, Single Drum, Single Purchase



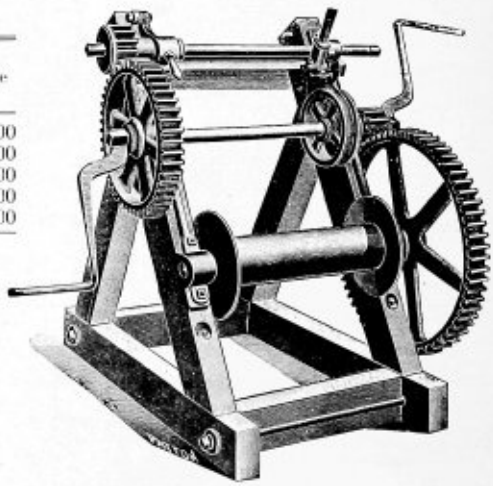
CAPACITY FOR FOUR MEN

No.	Diam. and Length of Drum inches	Diameter of Gear and Pinion inches	Lift of Two Men, Direct Single Line lbs.	Lift with Double and Triple Blocks Two Men, lbs.	Price
6298	6x21	28x4	2,000	10,000	$35.00
6299	6x26	28x4	2,000	10,000	37.00
6300	6x30	28x4	2,000	10,000	38.00
6301	9x16	28x4	1,500	7,500	35.00
6302	9x21	28x4	1,500	7,500	37.00

Style No. 17. Portable Winch, Single Drum, Double Purchase, with Brake

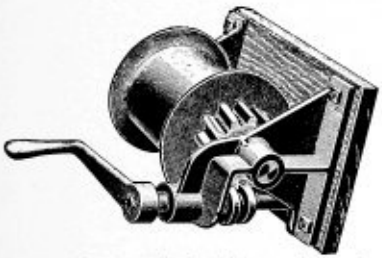
CAPACITY FOR FOUR MEN

No.	Diam. and Length of Drum inches	Diam. of Gear and Pinion inches	Lift of Two Men, Single Line, lbs.	Lift with Double and Triple Blocks Two Men, lbs.	Price
6311	6x21	28-18-4	7,500	37500	$70.00
6312	6x26	28-18-4	7,500	37500	75.00
6313	6x30	28-18-4	7,500	37500	80.00
6314	9x16	28-18-4	5,000	25000	70.00
6315	9x21	28-18-4	5,000	25000	75.00



Note.—Above capacities are for slow speed. Fast speed will lift one quarter the load.

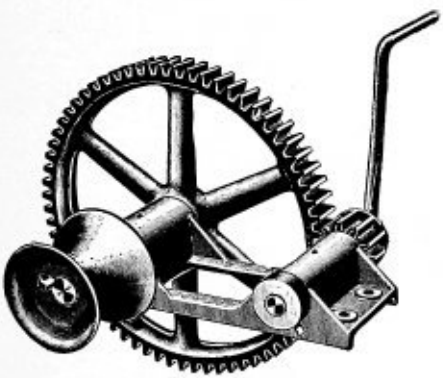
HAND POWERS



Style No. 17½ Safety Worm Geared

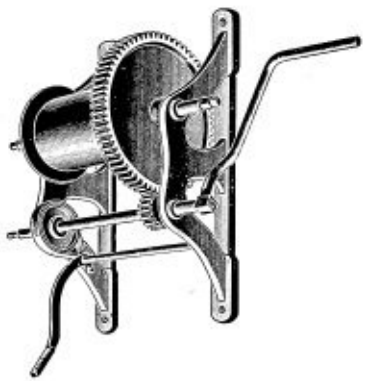
Especially adapted for use where it is desired to suspend the load. For Lights, Doors, and Skylights. In lowering, the handle must be used. No Pawl used.

Order No.	6318	6319
Diameter and Length of Drum	5½x6	5½x6
Capacity, lbs.	500	750
Price	$9.00	$12.00



Style No. 16½ Single Purchase, Full Nigger Head Drum

Order No.	6323
Diameter and Length of Drum	6x7
Diameter of Gear and Pinion	28x4
Lift of Two Men, Direct Single Line, lbs.	2,000
Price	$32.00



Style No. 19½ Single Drum, Single Purchase with Brake

CAPACITY FOR TWO MEN

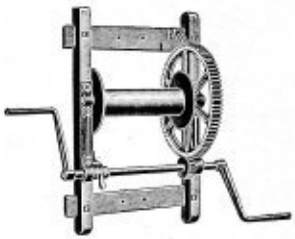
Order No.	6321
Diameter and Length of Drum	6x16
Diameter of Gear and Pinion	16x4
Lift of Two Men, Direct Single Line, lbs.	1,200
Lift with Double and Triple Blocks, Two Men, lbs.	3,000
Price	$25.00

DRUMS FOR HAND POWERS

Hand Powers are always furnished with Straight Drums, unless otherwise specified.

Straight — Full Nigger Head — Half Nigger Head

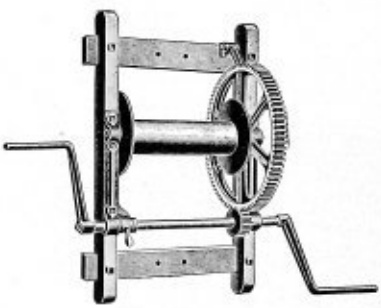
HAND POWERS



Style No. 19, Single Drum, Single Purchase

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift of Two Men with Single Block lbs.	Lift with Double and Triple Blocks Two Men lbs.	Price
6324	4x16	16x4	2,400	6,000	$22.00
6325	4x16	24x4	2,700	6,750	23.00
6326	4x24	24x4	2,700	6,750	25.00
6327	6x21	24x4	1,800	4,500	25.00

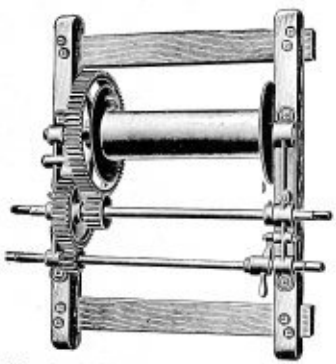


Style No. 20, Single Drum, Single Purchase

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift of Two Men with Single Block lbs.	Lift with Double and Triple Blocks Two Men lbs.	Price
6330	6x21	28x4	4,000	10,000	$30.00
6331	6x26	28x4	4,000	10,000	32.00
6332	6x30	28x4	4,000	10,000	33.00
6333	9x16	28x4	3,000	7,500	30.00
6334	9x21	28x4	3,000	7,500	32.00

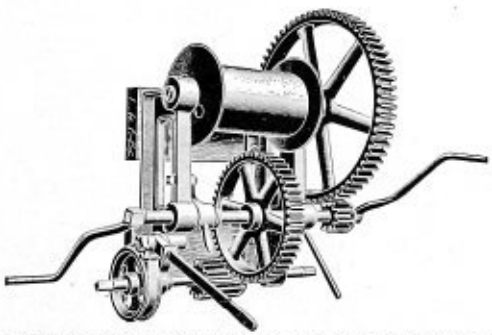
HAND POWERS



Style No. 21½, Single Drum, Double Purchase

CAPACITY FOR TWO MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift of Two Men with Single Block lbs.	Lift with Double and Triple Blocks lbs.	Price
6336	4 x 16	16– 9–3	2,500	6,250	$42.00
6337	4 x 24	16– 9–3	2,500	6,250	45.00
6338	6 x 21	16– 9–3	1,800	4,500	45.00
6339	6 x 21	28–18–4	15,000	37,500	50.00
6340	6 x 26	28–18–4	15,000	37,500	52.00
6341	6 x 30	28–18–4	15,000	37,500	53.00
6342	9 x 16	28–18–4	10,000	25,000	50.00
6343	9 x 21	28–18–4	10,000	25,000	52.00



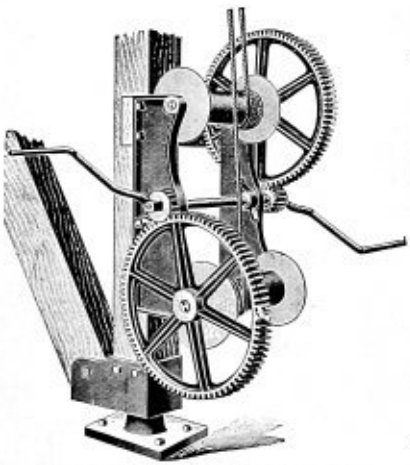
Style No. 21, Single Drum, Double Purchase with Brake

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift of Two Men with Single Block lbs.	Lift with Double and Triple Blocks lbs.	Price
6370	6 x 21	28–18–4	15,000	37,500	$60.00
6371	6 x 26	28–18–4	15,000	37,500	63.00
6372	9 x 16	28–18–4	10,000	25,000	60.00
6373	9 x 21	28–18–4	10,000	25,000	63.00

Note.—Above capacities are for slow speed. Fast speed will lift one quarter the load.

HAND POWERS

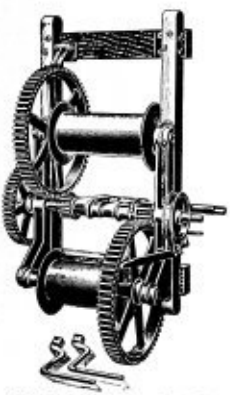


Style No. 22, Double Drum, Single Purchase

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift, Two Men with Single Blocks pounds	Lift with Double and Triple Blocks pounds	Price
6376	6x21	28x4	4,000	10,000	$50.00
6377	6x26	28x4	4,000	10,000	53.00
6378	9x16	28x4	3,000	7,500	50.00
6379	9x21	28x4	3,000	7,500	53.00

Note.—Price does not include foot block, derrick timber, and rope as shown in cut.



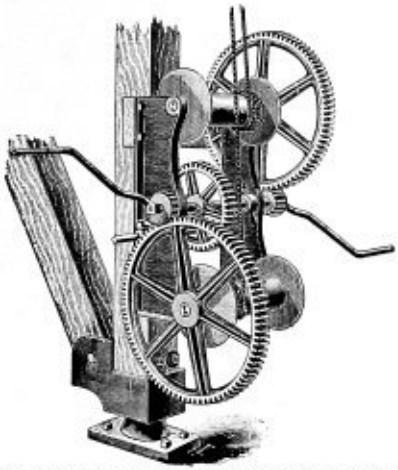
Style No. 22½—Double Drum, Double Purchase, with Brake and Boom Safety Attachment
(Patented April 17, 1906)

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift, Two Men with Single Blocks pounds	Lift, with Double and Triple Blocks, pounds	Price
6382	9x21 and 9x16	28x4 and 18x5	10,000	30,000	$100.00
6383	6x21 and 6x26	28x4 and 18x5	15,000	45,000	110.00
6384	6x30 and 6x26	28x4 and 18x5	15,000	45,000	120.00
6385	9x21 and 9x16	36x5 and 28x4	21,000	60,000	200.00
6386	9x26 and 9x21	36x5 and 28x4	21,000	60,000	215.00

Note.—Above Capacities are for slow speed; fast speed will lift one quarter the load.

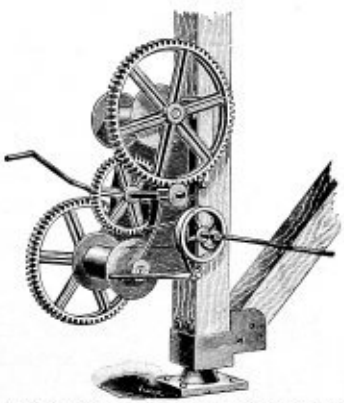
HAND POWERS



Style No. 23, Double Purchase, Fitted with Patent Safety Attachment, for Boom Drum

CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift of Two Men with Single Block lbs.	Lift with Double and Triple Blocks lbs.	Price
6388	6x21	28–18–4	15,000	37,500	$65.00
6389	6x26	28–18–4	15,000	37,500	68.00
6390	9x16	28–18–4	10,000	25,000	65.00
6391	9x21	28–18–4	10,000	25,000	68.00



Style No. 24, Double Drum, Double Purchase with Brake, Fitted with Patent Safety Attachment for Boom Drum

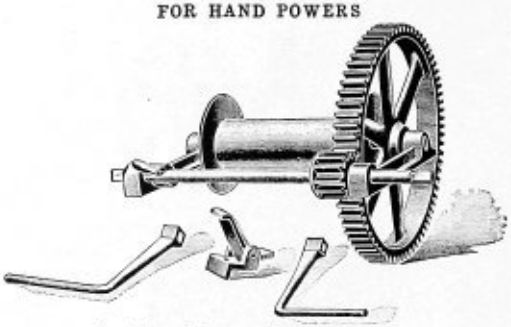
CAPACITY FOR FOUR MEN

No.	Diameter and Length of Drum	Diameter of Gear and Pinion	Lift of Two Men with Single Block lbs.	Lift with Double and Triple Blocks lbs.	Price
6393	6x21	28–18–4	15,000	37,500	$75.00
6394	6x26	28–18–4	15,000	37,500	80.00
6395	9x16	28–18–4	10,000	25,000	75.00
6396	9x21	28–18–4	10,000	25,000	80.00

NOTE.—Above capacities are for slow speed. Fast speed will lift one quarter the load. Price does not include foot block, derrick timber, and rope, as shown in cut.

GEARINGS

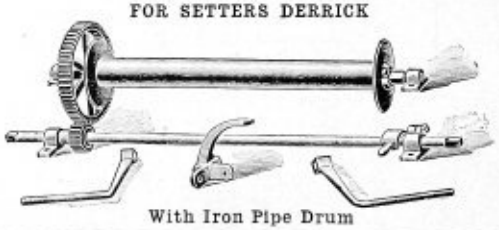
FOR HAND POWERS



Cast Iron Drum, Single Purchase

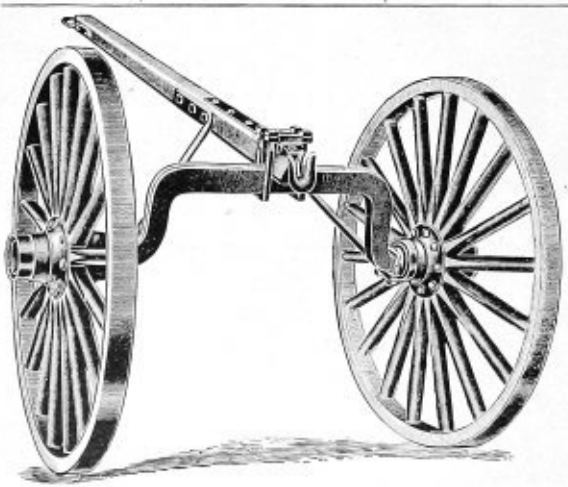
No.	Face and Diam. of Gear	No. of Teeth	Size of Drum	Price per Set
6400	1½x14½	10 and 56	5x12	$15.00
6401	2 x24	17 " 96	4x16	18.00
6402	2 x24	17 " 96	4x24	20.00
6403	2 x24	17 " 96	6x21	20.00
6404	3 x28	10 " 67	6x21	24.00
6405	3 x28	10 " 67	6x30	27.00
6406	3 x28	10 " 67	9x16	24.00

FOR SETTERS DERRICK



With Iron Pipe Drum

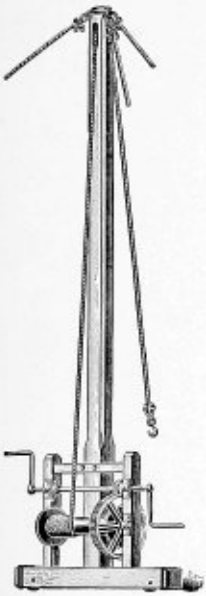
No.	Face and Diam. of Gear	No. of Teeth	Size of Drum	Price per Set
6409	2x16	17 and 64	4½x39	$30.00
6410	2x24	17 " 96	4½x39	32.00
6411	2x24	17 " 96	6½x39	36.00
6412	3x28	10 " 67	6½x39	40.00



PICK-UP CART

WELL ADAPTED FOR CONTRACTOR'S WORK IN HANDLING TIMBER, PIPE, RAILS, AND STRUCTURAL BEAMS

No.	Capacity tons	Diam. of Wheels inches	Width of Tires inches	Size of Axle inches	Price
6822	1	40	2	1½	$54.00
6823	1	48	2	1¾	60.00
6824	2½	54	2½	2	75.00
6825	3½	54	3	2½	85.00
6826	5	60	3	3	110.00



POLE DERRICK

HAND POWER

Capacity 3,000 Pounds

No.	Size Timber inches	Height feet	Price without Rope and Fittings
6415	6x6	16	$40.00
6416	6x8	20	44.00
6417	8x8	24	48.00
6418	8x8	28	54.00

SULKY DERRICK

Especially Adapted for Laying Pipe, etc.

Fitted with Brake, for Lowering

No.	Size Timbers inches	Height feet	Capacity lbs.	Price, including Blocks and Rope
6429	4x4	12	3,500	$80.00
6430	4x6	12	10,000	100.00

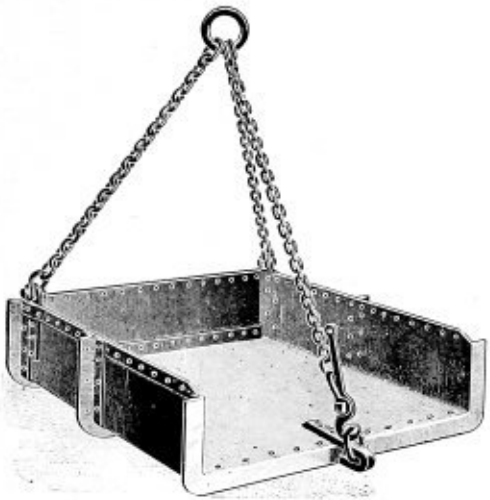
No. 6429 has 2 Single Blocks.
No. 6430 has 2 Double Blocks.
Cut shows Hand Brake; can furnish with Foot Brake.

Sulky Derrick

SETTER'S DERRICK

Height feet	Width of Top inches	Length of Drum	Width of Foot	Size Timber in Legs inches	Size Timber in Foot inches square	Each Complete	Ironwork Only
22	18	3 ft. 9 in.	6 ft. 6 in.	3 x6	6	$59.00	$43.50
25	20	4 "	6 " 6 "	3½x6	6	66.00	46.50
28	24	4 " 6 "	7 " 4 "	4 x6	6	79.50	59.50
30	30	5 "	8 "	4 x7	7	96.00	74.00
35	42	5 "	9 "	4 x7	7	106.00	82.50
40	42	5 " 6 "	16 " 6 "	4 x8	8	136.00	95.00

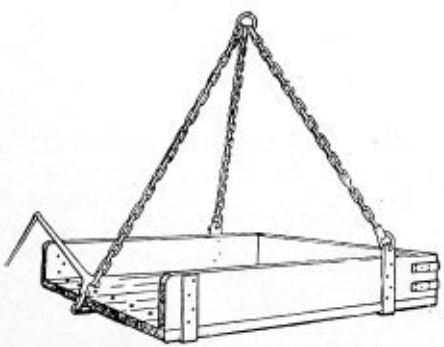
STEEL SCALE BOXES OR SKIPS



These Skips are built entirely of steel, and with heavy angle iron stiffeners. Timber shoes should be used. Other sizes than those listed, built to order.

No.	Size	Capacity	Price
6516	4 ft.x4 ft.x12 in.	½ yard.	$110.00
6517	5 " x5 " x14 "	1 "	125.00
6518	5 " x5 " x20 "	1½ "	140.00
6519	6 " x6 " x18 "	2 "	160.00

WOOD SCALE BOXES OR SKIPS



No.	Size	Capacity	Price
06516	4 ft.x4 ft.x12 in.	½ yard.	$55.00
06517	5 " x5 " x14 "	1 "	60.00

WILLIAMS CLAM SHELL BUCKETS

FOR HANDLING SAND, GRAVEL, ORE. ETC.,
AND FOR EXCAVATING

Type C
With Round Corners

Type D
With Square Corners

The Williams Bucket is an all Steel construction including even the sheaves which are finished smooth in the score, bushed with bronze and are bored to turn on pins of large diameter.

They save Time, Labor and Money.

Their first cost is entirely wiped out in what they save of what previously was waste.

Capacity Yards	Approximate Weight, Pounds	Each	Extra for Teeth
½	2000	$450.00	
¾	2400	500.00	
1	2850	550.00	$30.00
1¼	3200	600.00	
1½	3700	675.00	
1⅝	3900	725.00	40.00
2	4200	800.00	
2½	5000	875.00	
3	6000	1000.00	50.00

SMOOTH-ON COMPOUND

No. 1 and No. 2

Smooth-On Iron Cements No. 1 and No. 2 are chemically prepared iron compounds made and sold in a powder form and used by mixing with water to the consistency of stiff putty. When in this state they must be applied immediately, because the metallizing action of these cements is rapid, acting without heat, and in a few minutes will get too stiff to work. In a few hours they metallize as hard as iron. Smooth-On Iron Cements No. 1 and No. 2 are sold in 1, 5, 10 and 25 lb. Blue Labeled Tins like the above. Smooth-On is not sold in bulk.

SPECIAL FEATURES OF SMOOTH-ON IRON CEMENT No. 1

1. It must be applied as a putty and to cold dry metal.
2. It metallizes quickly and when hard has the color of cast iron.
3. When fully metallized it will withstand fire, steam, water, oil or gasoline, and the expansion and contraction being the same as iron, it insures a tight joint at all temperatures.

SPECIAL FEATURES OF SMOOTH-ON IRON CEMENT No. 2

1. It may be applied as a paint, paste or putty and is very slow hardening.
2. It is hydraulic, which makes it valuable for use in damp or wet places.
3. The metallizing of this cement is hastened by sprinkling with water soon after application.
4. It may be applied with a brush as a stiff paint by mixing 2½ parts of cement to one part of water.

SMOOTH-ON ELASTIC CEMENT

Smooth-On Elastic Cement is made to supply the demand for a cement that is both metallic and elastic. It is packed in 1, 5 and 10 lb. Gray Labeled Tins like above.

It is made from Smooth-On Iron Cement No. 1 and is especially designed and prepared for use on all inside seams of marine and stationary boilers and tank work to stop leaks in seams difficult to caulk and for soft or hard patches.

No. 1, 2 and Elastic ..... per pound, $0.50

JAMES ORR BOILER COMPOUND

A concentrated purifier having a vegetable base, strengthened by the addition of certain solvents famous for their power to precipitate all scale forming substance.

This compound is not an expense because it saves ten times its cost every time it is put into a boiler.

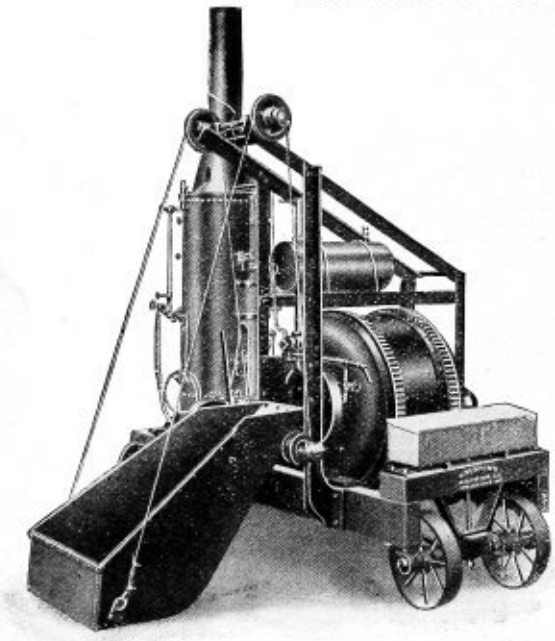
DIRECTIONS FOR USE

The liquid compound is applied through pump, man-hole or heater, as may be convenient. Apply the Paste or Powder after being dissolved in hot water in the same way. The Brick is usually used where they pump their supply water from a tank or cistern, by placing a brick therein and allowing it to dissolve.

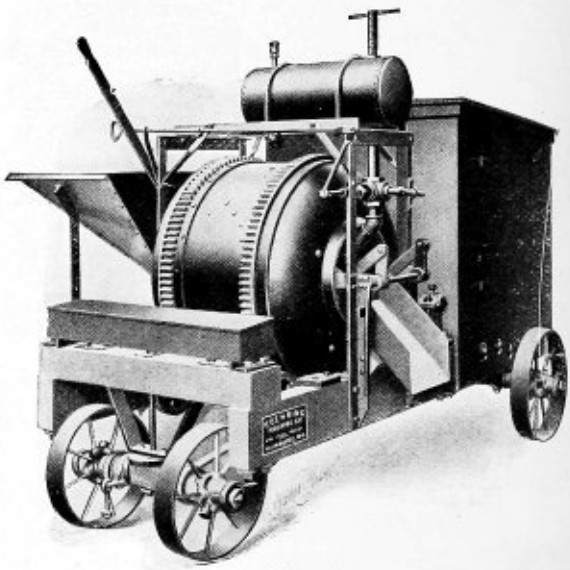
The amount of compound to be used depends upon the hardness and thickness of the scale and size of the boiler. We would suggest one quart per day of the liquid, paste or powder when dissolved, to every 75 horse-power until the scale is removed, after which a smaller amount will keep the boiler clean. Best results are obtained by using the compound daily.

Liquid in Barrells and Half Barrells	per gallon,	$0.90
" " 5 and 10 Gallon Jacket Cans	"	1.20
Powder in 50 and 100 lb. Boxes	per pound,	.10
Paste " " " " " "	"	.10
Bricks	"	.11

KOEHRING CONCRETE MIXERS



No. 1 B on Trucks
Equipped with Elevating Charging Bucket and Water Measuring Tank



No. 0 B
Equipped with Gasoline Engine, Batch Hopper Bin, and Water Measuring Tank

This Mixer is of the ordinary cylindrical drum type and does not tilt to discharge. The wear on the machine as well as the labor and great care required in tilting a mixer containing a ton or more of concrete is enormous, and it is next to impossible to regulate the discharge. As a rule the entire batch is dumped out and then has to be shoveled into wheelbarrows, thereby creating double work. It has a marked advantage over this old type of tilting mixer, in that any quantity of concrete can be taken out and the flow of concrete stopped instantaneously. It is quick in its action and very easily operated.

TABLE OF SIZES AND CAPACITIES

	No. 00-B	No. 0-B	No. 1-B	No. 2-B	No. 3-B	Special Street Mach.
Capacity per batch in Cubic Feet, Loose Material	4	7	11	22	27	14
Capacity per hour in Cubic Yards, Loose Material	3	7	14	25	30	18
Speed of Drum, R. P. M.	20	20	17	15	15	17
" of Intermediate Shaft	170	132	108	75	75	77
H. P. Furnished Steam Engine	....	4	6	8	10	7
" " " Boiler	....	6	8	12	15	8
" " Gasoline Engine	3	5	7	10	12	8
" " Electric Motor	3	5	7½	10	15	10

APPROXIMATE WEIGHT OF MIXERS

On Skids without Power	1200	1800	2800	5200	5500	....
" Trucks without Power	1500	2300	3200	6000	6400	....
" Skids with Engine only	....	2400	3400	6500	7000	....
" Trucks with Engine only	....	2900	4000	7300	7900	....
" Skids with Engine and Boiler	....	2800	4800	8000	9300	....
" Trucks with Engine and Boiler	....	3300	5400	8800	10200	7500
" Skids with Gasoline Engine	2000	3500	4600	7500	8600	....
" Trucks with Gasoline Engine	2300	3800	5200	8300	9500	7200
" Skids with Electric Motor	1900	3500	4400	6500	6800	....
" Trucks with Electric Motor	2100	3800	5000	7300	7700	....

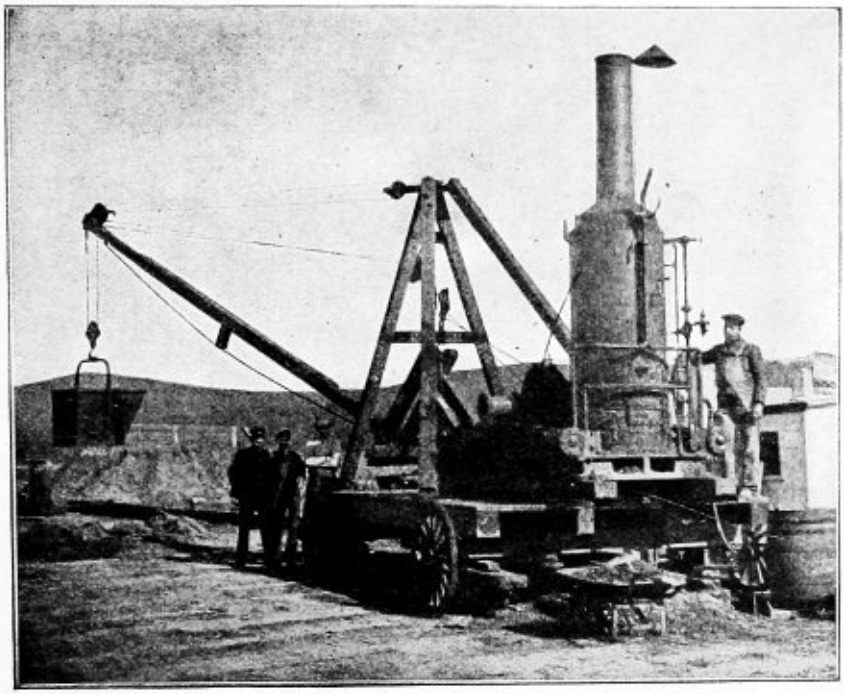
Prices and full information on request.

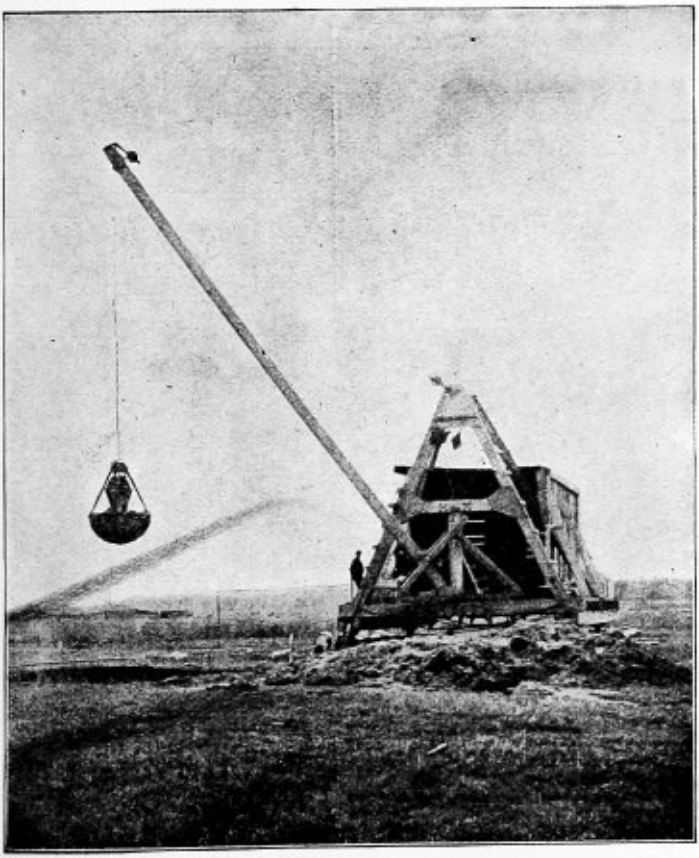
PORTABLE DERRICK

MOUNTED ON TRUCK WHEELS

Built for any gauge and for capacity up to two tons, which can be increased by the use of guys. Can be operated by steam, electric motor, or hand power.

PRICE ON APPLICATION





DERRICK CAR

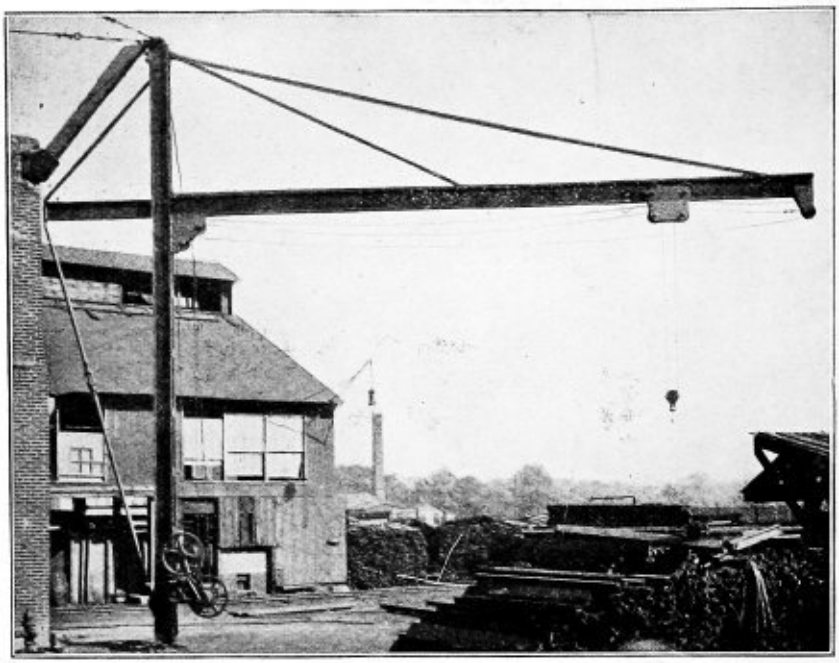
TIMBER OR STEEL CONSTRUCTION

Operated by Three Drum Hoist with Swinger. Moved along track by a line on the winch head, or a propelling device furnished if desired.

PRICE ON APPLICATION

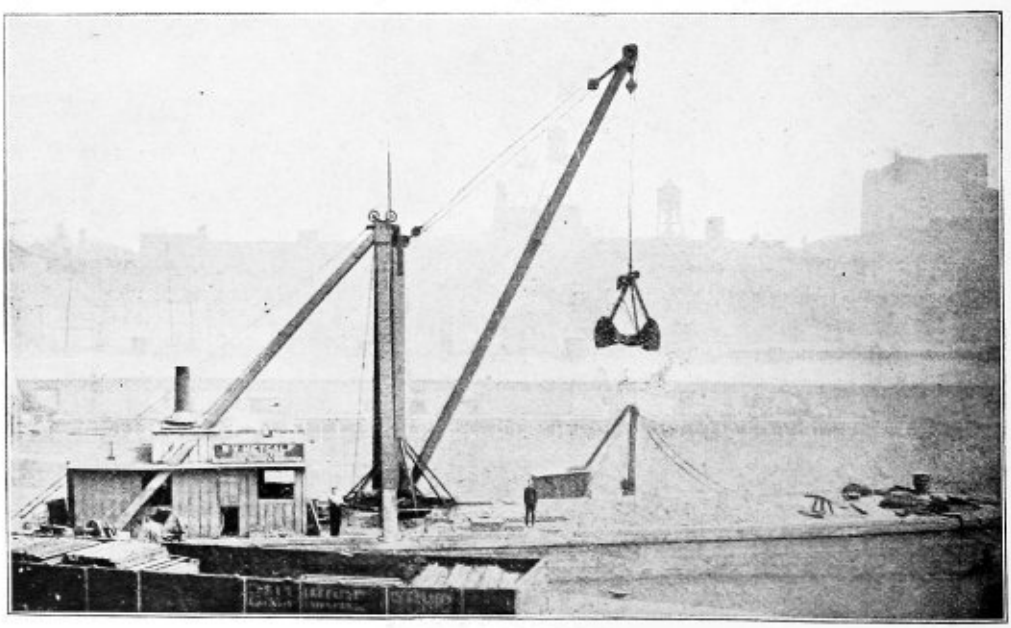
Stating Size of Bucket and Reach of Boom.

STEEL CRANE DERRICK



33 foot Jib, 5 tons Capacity

TWENTY TON BARGE DERRICK

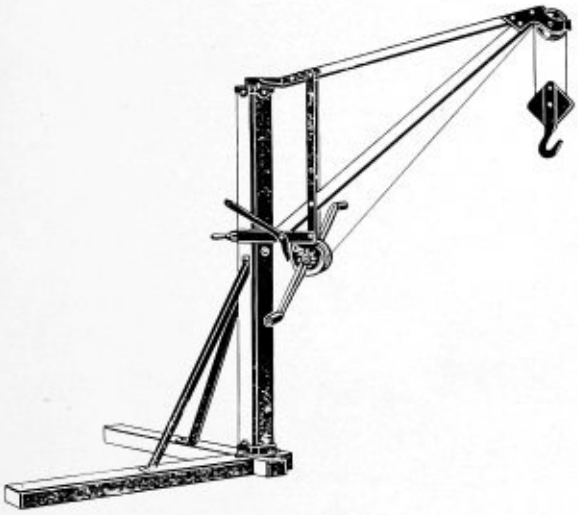


With 70 foot Boom and 2½ yard G. H. Williams "Faivrette" Clam Shell

THE SASGEN BUILDERS' DERRICK

CAPACITY 1,000 POUNDS

A Light Weight Portable Derrick



Can be set up by one man in fifteen minutes and taken apart by removing two nuts and one bolt. It can be operated by one man or horse or any power. It has a circle swing and will carry the load to any desired point. Hoisting capacity can be instantly regulated.

It is built for hard use, of best selected wood, steel forgings, high grade malleable castings, crucible cast steel hoisting cable.

PRICE

Complete with 100 ft. Wire Rope and Block..$35.00
Extra Wire Rope, per foot..... .05
Chain and Hook to hoist single wheelbarrow 2.50

The Sasgen Double Builders' Derrick for Wheelbarrows. Can be used outside or inside of building. Hoists wheelbarrow with load and lowers empty wheelbarrow at the same time. When load is up, can be swung around to floor of building.

PRICE

Complete with 125 ft. Wire Rope, Blocks, Chain and Hooks for Wheelbarrows.... $45.00

Sasgen's Derricks are particularly adapted for well-diggers.

PILE DRIVER

Township Pattern

This Pile Driver is manufactured to meet the demand for use on small bridges and other light driving. It is made as per list, in capacities from 500 to 1,200 lbs.

The motive power is usually a horse, although a winch (bolted to the ladder) will answer where speed is not required.

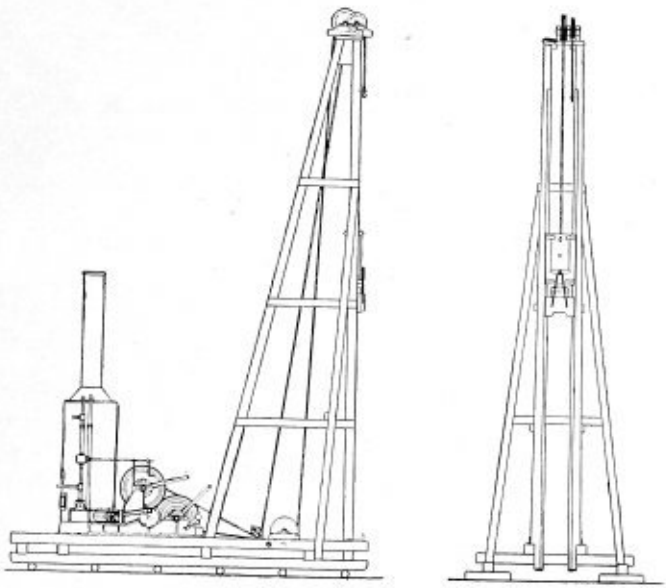
Prices include painting and frame knocked down for shipping.

PRICE LIST

Size of Driver lbs.	Distance between Jaws in.	Width of Jaw of Hammer in.	Height of Leaders ft.	Length of Channel Irons ft.	Hammer with Steel Die Fitted in	Forged Nippers	Two Top Sheaves Shafts, Boxes and Bolts	Liners, Including Bolts and Washers Channel Iron	One pair No. 1 Toggles with Bolt	One pair No. 2 Toggles with Bolt	Total Cost Ironwork	Total Cost of Woodwork	Total Cost Pile Driver without Rope and Blocks
500	13	4¼	24	23	$27.50	$21.00	$9.50	$22.10	$8.50	$3.60	$92.20	$150.00	$242.20
600	13	4¼	24	23	32.50	21.00	9.50	22.10	8.50	3.60	97.20	150.00	247.20
700	14	4¼	26	25	36.00	21.00	9.50	24.00	8.50	3.60	102.60	180.00	282.60
800	14	4¼	26	25	40.50	21.00	9.50	24.00	8.50	3.60	107.10	180.00	287.10
1,000	16	5¼	28	26½	48.00	28.00	13.50	29.70	13.50	4.80	137.50	200.00	337.50
1,200	16	5¼	28	26½	57.00	28.00	13.50	29.70	13.50	4.80	146.50	200.00	346.50

PILE DRIVER

CONTRACTORS' PATTERN



The cut illustrates a driver with extension sills, adapted to carry the engine. We make them either as shown, or with shorter sills, for use when the engine is located elsewbere.

These Drop Hammer Outfits for Contractors' use range from 1,500 pounds weight upward (we have made them as heavy as 5,200 pounds). Of late years they are generally used with friction engines, requiring round pins in hammers.

A full set of ironwork usually consists of the following: Hammer with steel pin fitted in; top sheaves, shafts, boxes and bolts; bottom sheave, shaft, boxes and bolts; one pair each of No. 1 and No. 2 toggles with bolts, and channel iron liners with bolts and washers. When, as shown in cut, a pile cap is used, toggles are not required.

A special form of this driver can be arranged by leaving out the maple rollers under the sills, and substituting the rigid roller bearings described on page 198. Four of these would be used, bolted directly to the lower sill, using either the 10-inch iron pipe or 10-inch oak rollers; the roller lying across the driver instead of lenghthwise. Pile Driver is painted. Price includes Timber, K. D. for shipping.

Price List

Size of Driver lbs.	Distance between Jaws of Hammer, in inches	Width of Jaws of Hammer in inches	Hammer with Steel Pin Fitted in	Top Sheaves, Shafts, Boxes, and Bolts, Solid Boxes	Bottom Sheave, Shaft, Boxes and Bolts	Height of Leaders, in feet	Length of Channel-Irons in feet	Channel-Iron Liners, including Bolts and Washers	One Pair No. 1 Toggles with Bolts	One Pair No. 2 Toggles with Bolts	Total Price of Ironwork	Woodwork, Complete with Short Sills	Total Price of Complete Pile Driver, with Short Sills	For Extension Sills, Additional
1,500	18	6¼	$65.00	$13.50	$15.50	30	27½	$37.40	$16.50	$6.50	$154.40	$240.00	$394.40	$40.00
1,800	18	6¼	77.00	13.50	15.50	30	27½	.....	.....	.....	166.40	.....	406.40	.....
2,000	19	7¼	85.00	18.00	21.00	35	32	51.20	.....	.....	198.20	310.00	508.20	50.00
2,500	19	7¼	105.00	18.00	21.00	40	37	59.20	.....	.....	226.20	420.00	646.20	.....
3,000	20	8¼	118.50	18.00	21.00	50	47	90.20	21.00	8.00	276.70	770.00	1046.70	70.00

On outfits above 3,000 pounds, prices will be given on application. When a Pile Cap is used, No. 1 or No. 2 Toggles are not required. On the larger sizes of leaders freight rates are liable to be prohibitory for long distances.

Prices of Hoisting Engines on application. For description, see pages 129 to 133.

PILE DRIVER FITTINGS

DROP HAMMERS

600 lbs.	per lb.,	$0.05½	1,500 to 3,000 lbs.	per lb.,	$0.04¼
700 to 800 lbs.	"	.05¼	3,000 lbs. and over	"	.04
1,000 to 1,500 "	"	.04¾			

DIES OR PINS

Weight	Steel Triangular Die fitted in Hammer	Steel Turned Pin fitted in Bored Hole
600 to 800 lbs.	$2.50	....
1,000 and under 1,500 lbs.	3.00	$4.00
1,500 to 3,000 lbs.	5.00	5.00
3,000 lbs. and upwards	....	6.00

NIPPERS

With Block

			NIPPER BLOCKS
No. 1.	Nipper, for hammer, over 2,500 lbs.	each $47.00	$9.00
" 2.	" " " 1,500 to 2,500 lbs.	" 36.00	8.00
" 3.	" " " 800 " 1,500	" " 28.00	6.50
" 4.	" " " 500 " 800	" " 21.00	6.50

Without Block

ADJUSTABLE TRIPS

The adjustable Trip is used for striking light blows, such as needed for a pile of small diameter, or for pile very near its destination. It is raised or lowered in the leaders by means of a small line, with suitable sheave at the top. The sides are of plate iron, the striking plates, at the ends, of cast iron, to give the necessary weight, while the bail is of wrought iron. We make them of three sizes, of the dimensions to suit leaders.

No. 1, for hammer 2,000 lbs. and over	each,	$32.00
" 2, " " 1,000 to 1,800 lbs.	"	22.00
" 3, " " 800 lbs. and under	"	17.50

TOGGLE IRONS

Weight of Drop Hammer	No. 1 Toggles		No. 2 Toggles	
	Opening	Per Pair	Center of Leaders to Hook	Per Pair
500 to 800 lbs.	13 inches	$8.50	6½ inches	$3.60
1,000 to 1,200 lbs.	18 "	13.50	9 "	4.80
1,600 " 2,500 "	22 "	16.50	11 "	6.50
Over 2,500 "	26 "	21.00	13 "	8.00

ROLLER SPOOLS AND AXLES

No. 1. Square Shaft

No. 1	per set of 4,	$124.00
" 2, very heavy	" " " "	280.00

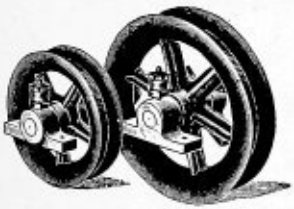
No. 2. Round Shaft

RIGID ROLLER BEARINGS

These are plain castings to take the place of the spool rollers above. Instead of rolling they slide on the long rollers. With pipe rollers they are also satisfactory. Our pattern is for 10 inch pipe, about 10¾ inch diameter, and also for 10 inch diameter oak roller. Specify when ordering which is to be used.

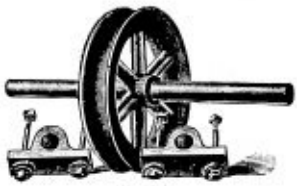
Per set of 4 ..... $46.00

PILE DRIVER FITTINGS



No. 1
Top Sheaves

No. 2
Top Sheaves



No. 3
Bottom Sheave

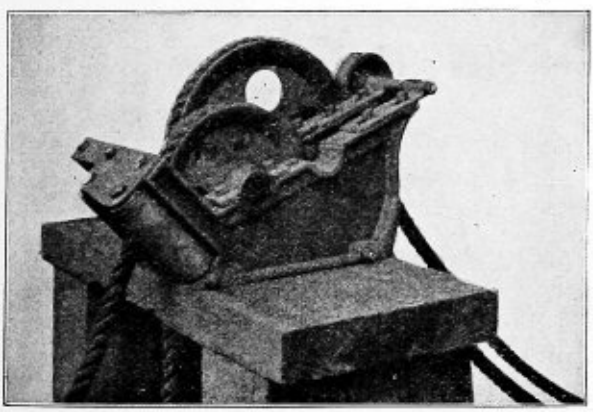
For Hammer pounds	Dimensions of Top Sheaves		Price Per Set		Dimensions of Bottom Sheave	Price Each
	Hammer Line	Pile Line	No. 1	No. 2		
500 to 800	9"x1 1/8 shaft	6"x1 1/8 shaft	$9.50	$12.00	12"x2 3/16 shaft	$11.00
1,000 " 1,800	12"x1 15/16 "	9"x1 1/8 "	13.50	16.00	16"x2 7/16 "	15.50
2,000 and over	16"x1 15/16 "	12"x1 15/16 "	18.00	21.00	20"x2 15/16 "	21.00

We recommend the following:

Sizes of Old Colony Hoisting Manila Rope for Drop Hammers

	Hammer Lines	Pile Lines
Size, 500 lbs.	7/8-inch.	3/4-inch
" 800 "	1 "	7/8 "
" 1,000 "	1 1/8 "	1 "
" 1,200 "	1 1/8 "	1 "
" 1,500 "	1 1/4 "	1 1/8 "
" 1,800 "	1 3/8 "	1 1/8 "
" 2,000 "	1 1/2 "	1 1/4 "
" 2,500 "	1 3/4 "	1 1/2 "
" 3,000 "	2 "	1 3/4 "

Smaller sizes can be used but, of course, are not so durable.



THE PERFECT HEAD BLOCK

Lindsey's Patent

The inclined guide rollers permit the pile line to lead out in any direction without extra friction or wear, and the entire Head Block is so constructed that the lines cannot run against any sharp angles, nor can they be displaced from the sheaves in service. Each.....$100.00

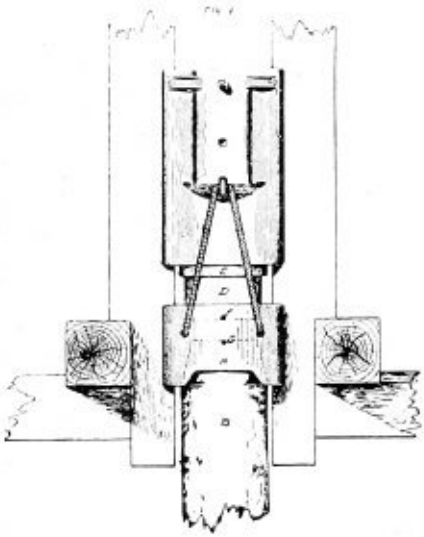
SWIVELING BOTTOM SHEAVE

For use at the bottom of leaders for hoisting line. Can use either Manila or Wire Rope. In ordering state for what it is to be used.

12 Sheaves, each.....$33.00
9 Sheaves, each..... 26.00

PILE DRIVER FITTINGS

PATENT CAP FOR PILE DRIVING



CASGRAIN'S

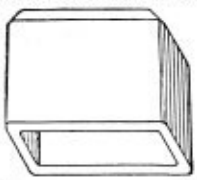
In the operation of pile driving it frequently happens that the piles are either split or broomed on their tops by the concussion of the hammer. The Casgrain Cap overcomes this difficulty.

Cap, including Block, Band, and Pins for Hammer, each .. $72.00

Pile Cap Block, turned oak 2.90

Pile Cap Band, Norway iron..... 5.00

SHEET PLANK CAPS
Hammered from Steel Billets



For	Each
2″ x 6″	$6.50
2″ x 8″	7.00
2″ x 10″	7.50
2″ x 12″	8.50

PILE BANDS

All sizes, per lb.....

PILE HEAD COVER
Cast Iron

11½ inches diameter..each, $1.20
13½ " " " 1.50

PILE POINTS, OR PILE SHOES

No. 1

No. 2

No. 3

No. 1			No. 2			No. 3		
Size inches	Weight pounds	Each	Size inches	Weight pounds	Each	Inches Round	Weight	Each
4 x 4	15	$1.50	9 x 2½	17	$1.70	6	35	$2.30
5 x 5	20	2.00	9 x 3	25	2.00	8	78	4.50
6 x 6	25	2.30	9 x 3½	33	2.50	10	150	7.00

Spikes are included in prices.

JACKS

PULLING AND PUSHING RATCHET JACKS, OR STEAMBOAT RATCHETS

No. 1

No. 2

No. 3

No. 4

Have capacity of 7 to 10 tons. Is double acting, which enables the operator to "pull" or "let go" without changing his position, by reversing. Can be worked in any position.

18 in.	barrel,	$1\frac{3}{8}$	in.	screw	.....	each,	$7.00
24 "	"	$1\frac{3}{8}$	"	"	.....	"	7.50
30 "	"	$1\frac{3}{8}$	"	"	.....	"	8.00
36 "	"	$1\frac{3}{8}$	"	"	.....	"	9.50
24 "	"	$1\frac{3}{4}$	"	"	.....	"	16.00
30 "	"	$1\frac{3}{4}$	"	"	.....	"	17.00
36 "	"	$1\frac{3}{4}$	"	"	.....	"	18.00

We can furnish with any desired attachments as illustrated. Unless specified we will ship attachment as shown in complete Jack.

PEARSON RATCHET PULLING JACKS

With Hooks for Pulling

With Spud Ends for Pushing

Capacity tons	Price Each	Length Closed inches	Run of Screw inches	Weight pounds
7	$17.50	33	12	35
10	22.50	33	12	50

Capacity tons	Weight pounds	Length Closed with Hooks Dropped inches	Length Closed with Hooks Extended inches	Run of Screw	Price Each
7	50	33	$39\frac{1}{2}$	18	$22.50

PEARSON'S CAR REPLACING JACK

With Socket Bearing Head and Foot

Capacity.....50 tons per pair
Weight.....85 pounds each
Length, closed.....28 inches
Hoist.....14 inches
Price.....per pair, $67.50

SCREW TRACK JACK

Capacity.....12 tons
Diameter Screw.....$1\frac{1}{2}$ inches
Length Screw.....18 inches
Price.....each, $13.00

JACK SCREWS

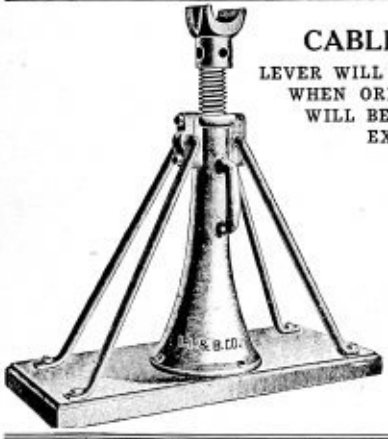
BELL BASE RATCHET

This Jack has wrought iron screw, cast iron stand and cap, and steel ratchet, pawl and handle.

CAPACITY

2	inch	Screws	24	Tons
2¼	"	"	28	"
2½	"	"	32	"
2¾	"	"	36	"
3	"	"	40	"

Diameter of Screw inches	Height Over All inches	Price	Diameter of Screw inches	Height Over All inches	Price
2	12	$16.00	2½	22	$24.50
2	14	16.75	2½	24	25.50
2	16	17.50	2½	26	26.50
2	18	18.25	2½	28	27.75
2	20	19.00	2½	30	29.00
2	22	19.75	2½	34	33.00
2	24	20.50	2½	36	35.00
2	26	21.50	2½	38	37.00
2	28	22.50	2¾	20	27.50
2	30	23.50	2¾	24	30.00
2¼	18	21.00	2¾	28	32.50
2¼	20	22.00	2¾	30	34.00
2¼	22	23.00	2¾	36	40.00
2¼	24	24.00	3	20	32.00
2¼	26	25.00	3	24	35.00
2¼	28	26.00	3	26	37.00
2¼	30	27.00	3	28	38.50
2½	18	22.50	3	30	40.00
2½	20	23.50	3	36	48.00



CABLE REEL

LEVER WILL BE SENT ONLY WHEN ORDERED, AND WILL BE CHARGED EXTRA

Diameter of Screw inches	Height Over all when Closed inches	Rise inches	Capacity Tons	Weight about pounds	Size of Base	Price
2	19	8	24	50	2x10x20	$15.00
2	21	10	24	55	2x10x22	16.00
2	27	16	24	72	2x11x30	18.00
2½	16	4	30	47	2x11x20	16.50
2½	28	16	30	89	2x11x30	24.00
3	29	15	36	130	3x11x30	36.00
3	35	21	36	143	3x11x30	42.00

TRIPOD RATCHET

Tripod Jack Screws have wrought iron screws, legs and bases, brass nuts and steel ratchets, pawls and handles.

CAPACITY

2¼	inch	Screws	28	Tons
2½	"	"	32	"
2¾	"	"	36	"
3	"	"	40	"

Diameter of Screw inches	Height Over All inches	Price
2¼	18	$50.00
2¼	20	51.00
2¼	22	52.00
2¼	24	53.00
2½	18	56.50
2½	20	57.50
2½	22	58.50
2½	24	59.50
2½	26	60.75
2½	28	62.00
2½	30	63.25
2½	36	67.00
2¾	24	65.00
2¾	26	66.25
2¾	28	67.50
2¾	30	68.75
2¾	36	73.00
3	24	70.00
3	26	71.50
3	28	73.00
3	30	74.50
3	36	79.00

RATCHET CARRYING

This Jack has a steel base, brass nuts and wrought iron screws and legs. The ratchets, pawls and handles are made of steel and malleable iron.

Capacity		36	Tons
Diameter of Lifting Screw		2¾	inches
"	" Traverse Screw	1⅝	"
Length	" Lifting Screw	18	"
"	" Traverse Screw	18	"
Height over all		26	"
Price			$140.00

LOCOMOTIVE JACK SCREWS

All Screws are warranted to carry Load specified. Levers will be sent only when ordered and will be charged for.

Diam. of Screw inches	Height of Stand inches	Price	Diam. of Screw inches	Height of Stand inches	Price
1¼	4	$2.90	2¼	6	$7.00
1¼	6	3.10	2¼	8	7.50
1¼	8	3.40	2¼	10	8.25
1¼	10	3.80	2¼	12	9.00
1¼	12	4.20	2¼	14	10.00
1¼	14	4.60	2¼	16	11.00
1½	4	3.25	2¼	18	12.00
1½	5	3.50	2¼	20	13.25
1½	6	3.75	2¼	22	14.50
1½	8	4.25	2¼	24	15.75
1½	10	4.75	2½	6	7.75
1½	12	5.25	2½	6½	8.00
1½	14	6.00	2½	8	8.75
1½	16	6.75	2½	10	9.75
1¾	6	4.50	2½	12	10.75
1¾	8	5.00	2½	14	12.00
1¾	10	5.75	2½	16	13.25
1¾	12	6.25	2½	18	14.50
1¾	14	6.75	2½	20	15.75
1¾	16	7.50	2½	22	17.00
1¾	18	8.50	2½	24	18.25
2	5	5.00	2½	28	22.00
2	6	5.25	2½	32	26.00
2	8	6.00	3	14	19.50
2	10	6.75	3	16	20.75
2	12	7.50	3	18	22.00
2	14	8.25	3	20	23.25
2	16	9.25	3	22	24.50
2	18	10.25	3	24	25.75
2	20	11.50	3	30	30.00
2	22	12.50	...	..	.....
2	24	13.50	...	..	.....

HOUSE RAISING SCREWS

Cast Iron

PRICE LIST OF CAST IRON

These Screws are cast with seamless threads which make them very smooth and uniform.

Diameter of Screw inches	Height Over all inches	Each
3	20	$3.50
3	22	3.75
3	24	4.00
3	26	4.25
3	28	4.50
3	30	4.75
3	32	5.00
3	34	5.25
3	36	5.50

TABLE OF CAPACITY

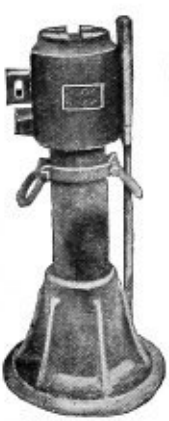
Screws, inches	Capacity, tons	For Height Over all add to Height of Stand, inches
1¼	10	2¼
1½	12	2½
1¾	16	2¾
2	20	3¼
2¼	24	3¾
2½	28	4
3	36	4½

MAPLE ROLLERS

House and Machinery

Dia. in.	Length ft. in.	Each	Dia. ft.	Length ft.	Each	Dia. in.	Length ft.	Each
7½	4-8	$2.70	6	6	$2.70	4	4	$1.40
7	4-8	2.50	6	3	1.40	4	5	1.80
7	6	3.50	5	5	2.00	3½	3	.80
7	4	2.20	5	4	1.60	3½	4	1.20
7	3	1.70	5	3	1.20	3½	5	1.40
6	4-8	2.10	5	6	2.40	3	3	.70
6	4	1.70	4	3	1.00	3	4	.90
						3	5	1.20

HYDRAULIC JACKS



Broad Base

Plain Base

Capacity Tons	Raise inches	Broad Base			Plain Base		
		Height When Down inches	Weight lbs.	Price	Height When Down inches	Weight lbs.	Price
4	12	24	67	$62.00	24½	55	$58.00
7	12	25	85	68.00	25¼	67	62.00
7	18	31	97	74.00	31¼	77	68.00
7	24	37½	110	80.00	38	95	74.00
10	12	25	120	76.00	25¼	97	66.00
10	18	31	130	88.00	31¼	110	76.00
10	24	37¾	150	100.00	38	128	86.00
15	12	25½	145	100.00	25½	118	82.00
15	18	31½	162	116.00	31½	135	96.00
15	24	38	185	132.00	38	155	110.00
20	12	26½	180	124.00	26½	150	96.00
20	18	32½	206	144.00	32½	174	118.00
20	24	38½	231	164.00	38½	197	140.00
30	9	23	215	152.00	22½	176	128.00
30	12	26½	220	162.00	26	188	136.00
30	18	32½	250	190.00	32	220	160.00
40	12	26¾	260	200.00	26½	240	176.00
40	18	33	294	230.00	33	272	200.00
50	12	28	320	240.00	27	270	206.00
50	18	34½	355	270.00	.....	.....	.....

NOTE.—40 and 50 Ton are all Steel.

Claw

CLAW

Capacity tons	Rise inches	Height When Down inches	Height of Claw inches	Weight lbs.	Price
4	12	24½	5	78	$66.00
7	12	25	5	95	74.00
7	18	31	5	110	80.00
10	12	26	6	145	84.00
10	18	32	6	162	94.00
15	12	25¾	6½	175	120.00
15	18	32	6½	195	136.00
20	12	26½	6½	220	160.00
20	18	32½	6½	240	180.00
30	12	26½	8	280	200.00
30	18	32½	8	310	220.00
40	12	26½	8	310	240.00

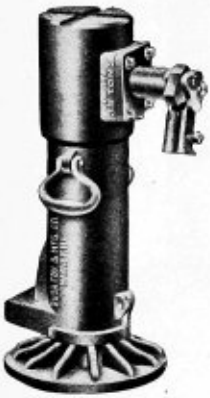
Broad Base Key Release

BROAD BASE KEY RELEASE

Capacity tons	Rise inches	Height When Down inches	Diameter of Base inches	Weight lbs.	Price
10	12	27	12	115	$100.00
10	18	33	12	130	110.00
15	12	27½	12	155	120.00
15	18	33½	12	175	130.00
20	12	28	13	190	140.00
20	18	34	13	220	150.00
30	12	28½	13½	230	160.00
30	18	34½	13½	270	170.00
40	12	29	13¾	270	200.00
40	18	35	13¾	310	210.00

This Jack is lowered by means of a key which is independent of the lever used in raising.

BALL-BEARING JACKS



No. 118

No. 119

No. 116, 117, 125
Extra Heavy

Style	Capacity tons	Height inches	Rise inches	Diameter of Base, inches	Weight pounds	Price
118	35	26	13	12	175	$130.00
119	35	32	19	12	185	138.00
116	50	24	9	14	270	150.00
117	50	27	13	14	292	150.00
125	60	26	12	14	323	175.00

No. 127

No. 109, 111

No. 110
Showing Hook for Low Set Loads

No.	Capacity tons	Height inches	Rise inches	Diameter of Base, inches	Diameter of Head, inches	Weight pounds	Price	Hook Extra
127	75	26	12	14	12	385	$200.00	.....
109	25	20	9	10	....	106	80.00	$6.00
110	25	24	11	13	....	149	85.00	6.00
111	25	26	13	12	....	164	90.00	6.00

Foot of Jack is intended to lift only one-half capacity.

BALL-BEARING JACKS

No. 103 and 104

No. 105

No. 101 and 102

No.	Capacity tons	Height inches	Rise inches	Diameter of Base, inches	Weight lbs.	Price	Hook Extra
103	15	20	9	12	80	$60.00	$5.00
104	15	22	10	10	80	60.00	6.00
105	15	26	13	10	92	70.00	6.00
101	25	33	20	12	154	95.00	6.00
102	15	34	20	12	154	75.00	6.00

Hook can be used for low set loads. This comes extra, as is shown in list

No. 104 F

No. 105 F

No. 113, 114, 115

No.	Capacity tons	Height inches	Rise inches	Size of Base, inches	Weight lbs.	Price
104 F	15	22	10	7x9	80	$60.00
105 F	15	26	13	7x9	110	70.00
113	35	22	10	8x9	190	130.00
114	25	22	10	8x9	136	90.00
115	25	26	13	8x9	157	96.00

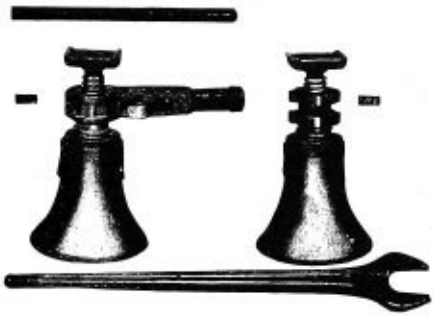
Foot of Jack is intended to lift only one-half full capacity.

JENNE TRACK JACKS

No.	Lift inches	Height Bar Down inches	Capacity tons	Weight lbs.	Price
1	12	29	5	62	$20.00
2	15	33	10	85	25.00

All bars and rings should have Oil and Grease burned off from them before putting the Jack together. This is Important.

TELESCOPIC JACK SCREWS

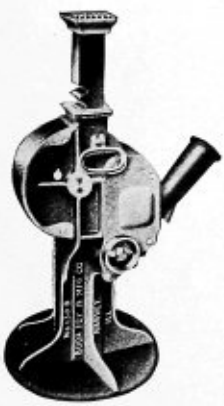


Size No.	tons	Stand inches	Net Rise inches	Price Fig. 1	Price Fig. 2
1	10	10	11	$14.00	$20.00
2	25	14	16	18.00	24.00
3	25	17	23	22.00	28.00
4	25	21	31	28.00	30.00
5	25	25	36	30.00	36.00

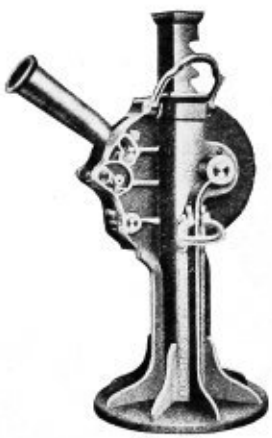
Fig. 2 represents the Jack with ratchet lever, Fig. 1, wrench lever.

BUDA GEARED RATCHET JACKS

WITH SAFETY CATCH



No. 130



No. 500

The No. 130 has an eccentric at side by which direction of lifting bar is changed.

The No. 500 has a similar arrangement in the way of a small crank which when upright causes load to be lifted, and when down, as in illustration, causes load to lower. Each stroke of lever lifts load ¼ inch.

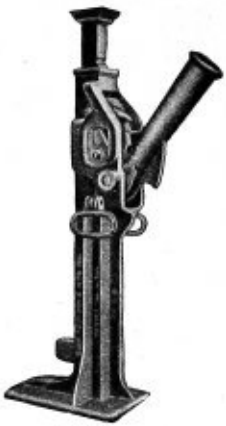
Both Jacks have safety dog which safeguards against load falling.

No.	Capacity tons	Height Bar Down	Rise inches	Size of Bar	Weight lbs.	Price
130	35	28 in.	17	3 x 2½ in.	225	$120.00
500	30	27 in.	17	3 x 2½ in.	237	120.00

RATCHET TRIP JACKS

BARRETT PATTERN

No. 1
Double Acting Trip



No. 6
Double Acting Trip

No. 17
Single Acting Trip

No.	Capacity in tons	Height Bar Down inches	Rise of Bar inches	Height Bar Raised inches	Size of Bar inches	Weight lbs.	Price
1	10	24	13½	37½	1½ x 1½	62	$18.00
6	15	31	19	50	1⅞ x 1⅝	105	32.00
17	10	24	13¾	37¾	1½ x 1½	63	18.00

DOUBLE ACTING, AUTOMATIC LOWERING RATCHET JACKS

No. 2

No. 3

No. 4

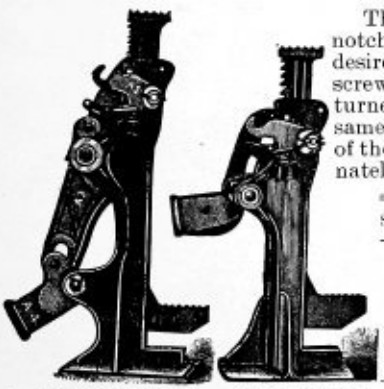
No.	Capacity in tons	Height Bar Down inches	Rise of Bar inches	Height Bar Raised inches	Size of Bar inches	Weight lbs.	Price
2	10	21	10	31	1⅝ x 1½	65	$25.00
3	12	26½	15	41½	1¾ x 1⅞	85	30.00
4	15	22	10	32	2 x 2	100	35.00

STONE JACKS

WOOD FRAME			IRON FRAME		
Capacity tons	Height inches	Each	Capacity inches	Height inches	Each
2	34	$45.00	2	32	$45.00
3	34½	50.00	3	32½	50.00
4	35	55.00	4	34	55.00
5	36	62.00	5	34	62.00
6	36½	70.00	6	35	70.00
8	37	84.50	8	36	84.50
10	37½	110.00	10	36	110.00
12	38	120.00	12	37	120.00
15	39	140.00	15	39	140.00
18	39	150.00	....	....	....
20	39	162.50	....	....	....
25	39	175.00	....	....	....
30	39	200.00	....	....	....

THE WEILER JACK

Malleable Iron and Steel Castings

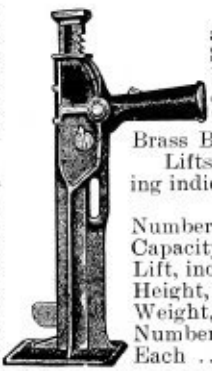


Compound Lever Styles K, A, D — Single Lever Styles W, H, O

This Jack both raises and lowers notch by notch, or can be dropped if desired. To raise see that the thumb screw on small eccentric plate is turned to back of Jack; to lower turn same to front of Jack and the motion of the lever will throw pawls out alternately and lower the weight easily.

Style	Height inches	Rise inch	Lifts tons	Weight pounds	Each
W	12½	5½	3	25	$5.00
H	14½	7	3½	30	6.00
O	18	10	4	35	7.50
K	18	10	5	50	9.50
A	21	12½	6	52	10.00
D	21	12½	7	54	12.00

SIMPLEX JACKS



Malleable Standard, Steel Lever Socket and Rack Bar, Forged Interchangeable Pawls. Tool Steel Pin, Brass Button Indicator.

Lifts or lowers by turning indicator button on side.

Numbers	15	10
Capacity, tons..	15	10
Lift, inches	17	12½
Height, inches..	28	21
Weight, pounds	75	60
Number of piec's	10	10
Each	$35.00	25.00

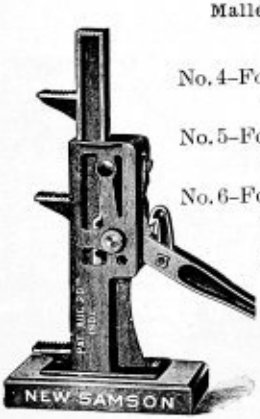
THE PEERLESS JACK

For Carriages, Wagons, Trucks and other Vehicles

	Rise in.	Weight lbs.	Each
No. 17–For vehicles of 1 ton	8½	7	$2.00
No. 19–For vehicles of 2 tons.....	8½	9	3.00
No. 22–For vehicles of 5 tons with foot	8½	25	6.00

NEW SAMSON JACK

Malleable Iron



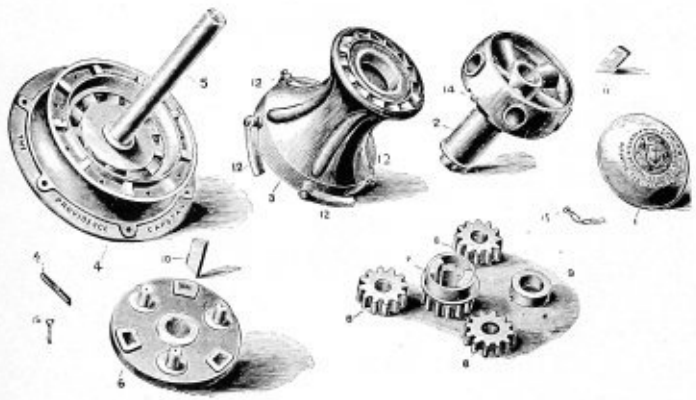
Description	Weight lbs.	Each
No. 4–For vehicles weighing 2 tons.....	16	$4.00
No. 5–For vehicles weighing 6 tons	25	5.00
No. 6–For vehicles weighing 8 tons	32	7.00
No. 6–With short standard	30	7.00

"PROVIDENCE" POWER CAPSTAN

The Nos. AA and BB Power Capstans are of same general dimensions and power as the regular Nos. A and B, but the castings are thicker and heavier, and shafts are larger. The AA Capstan is as strong as No. B, and No. BB same strength as No. C regular. These Capstans were gotten up for those who require a very strong small capstan.

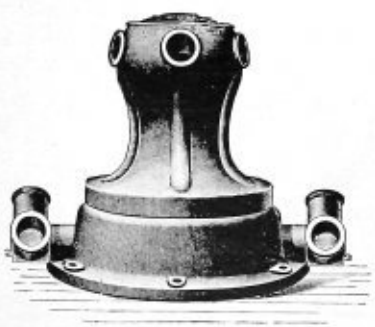
Size	Diam. of Bbl. over Whelps	Diam. of Base	Height	Weight	Circumference of Rope	Shipping Measurement	Price
O	7½ in.	19 in.	21 in	250 lbs.	3½ in.	4½ cu. ft.	$27.00
A	8 "	23 "	28 "	400 "	4 "	8½ "	36.00
AA	8 "	23 "	28 "	450 "	4 "	8½ "	40.00
B	8½ "	24½ "	31¼ "	500 "	4½ "	11 "	45.00
BB	8½ "	24½ "	31¼ "	550 "	4½ "	11 "	50.00
C	9½ "	29½ "	34½ "	750 "	5 "	16 "	65.00
D	10½ "	32 "	38 "	1100 "	6 "	23½ "	85.00
E	11½ "	34 "	39½ "	1250 "	7½ "	27 "	100.00

PARTS OF "PROVIDENCE" POWER CAPSTAN



No. 1, Cover.
" 2, Head.
" 3, Barrel.
" 4, Base.
" 5, Shaft.
" 6, Gear Plate.
" 7, Center Gear.
" 8, Pinion Gear.
" 9, Washer and Bolt.
" 10, Gear Plate Key.
" 11, Head Key.
" 12, Pawl and Bolt.
" 13, Split Pin for Cover.
" 14, Spring for Raising Head Key.
" 15, Strap Bolt.
" 16, Strap.

THE "PROVIDENCE" RATCHET CAPSTAN



Especially designed to be used where space is limited. Arranged for power and speed.

Size	Diam. of Bbl. over Whelps	Diam. of Base	Height	Weight	Shipping Measurement	Price
C	9½ in.	24 in.	24 in.	160 lbs.	4 cu. ft.	$27.00
A	7½ "	17 "	18½ "	400 "	10½ "	50.00

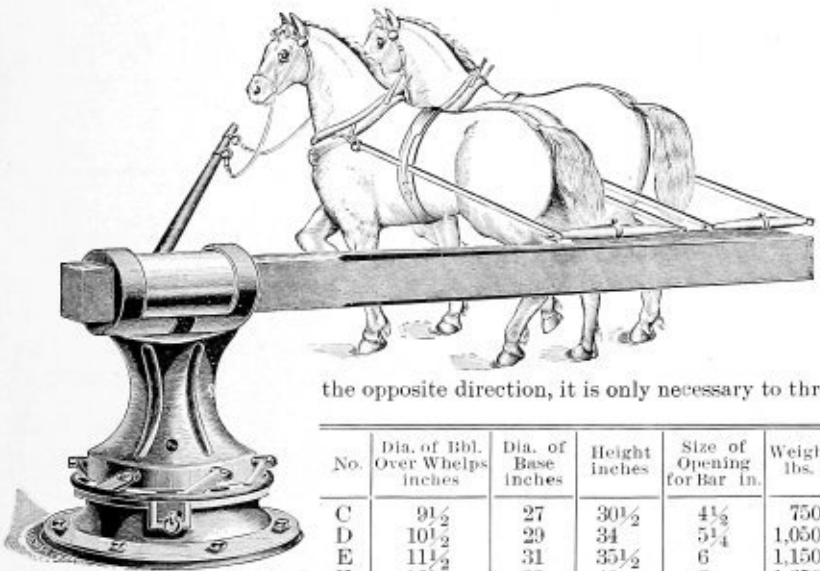
Complete assortment of these goods in our Marine Catalog. If interested, send for it.

THE "PROVIDENCE" CRANK CAPSTAN

Arranged for Both Speed and Power. Reversal in Direction of Rotation of Cranks the only Change Necessary.

No.	Dia. of Bbl. Over Whelps inches	Dia. of Base inches	Height inches	Weight lbs.	Circum. of Rope inches	Shipping Measurement cu. ft.	Price with Iron Cover	Price with Brass Cover En
O	7½	19	21	250	3½	4½	$40.00	$50.00
A	8	23	27½	400	4	8	52.00	63.00
B	8½	24½	30¼	600	4½	11	65.50	78.00
C	9½	29½	34¼	800	5	17½	80.00	93.00
D	10½	32	36	1,000	6	21½	102.00	116.00
E	11½	34	37	1,200	7½	25	114.00	128.00
F	12½	38	41	1,500	9	34½	125.00	141.00

THE "PROVIDENCE" HORSE POWER CAPSTAN

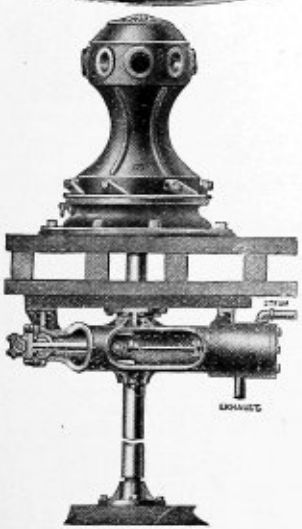


The Capstan has two speeds in either direction; the change of speeds is made without changing the direction of the horses or the Capstan barrel. By putting the block key in the head of Capstan, speed is obtained, and by putting the block key in the base, power is obtained. The Capstan is geared three to one, and when the block key is placed in the base the extra power of these gears is obtained.

To reverse the direction of rotation of the Capstan barrel, or to drive the horses in the opposite direction, it is only necessary to throw the pawls over.

No.	Dia. of Bbl. Over Whelps inches	Dia. of Base inches	Height inches	Size of Opening for Bar in.	Weight lbs.	Circum'ce. of Rope inches	Shipping Measurement cu. ft.	Price
C	9½	27	30½	4½	750	5	13	$80.00
D	10½	29	34	5¼	1,050	6	16	95.00
E	11½	31	35½	6	1,150	7½	20	105.00
F	12½	33	40	6	1,650	9	25½	130.00

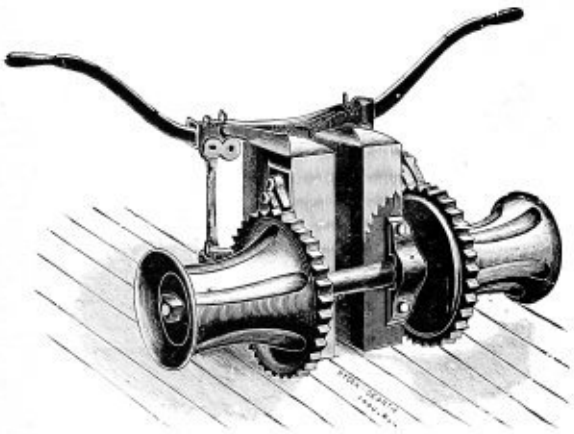
PROVIDENCE STEAM CAPSTAN



No.	Diameter of Barrels inches	Diameter of Base inches	Height inches	Weight lbs.	Double Steam Cylinder inches	Price
A	8	23	27½	1,000	4 x 4	$250.00
B	8½	24½	31½	1,700	4 x 6	300.00
C	9½	29½	34½	2,000	4 x 6	325.00
D	10½	32	37½	2,800	5 x 7	370.00
E	11½	34	39½	3,500	6 x 8	430.00
F	12½	36½	43	4,800	7 x 8	525.00
F	12½	36½	43	5,000	8 x 8	585.00
G	15¾	42	42	5,350	7 x 8	600.00
G	15¾	42	42	5,750	8 x 8	630.00

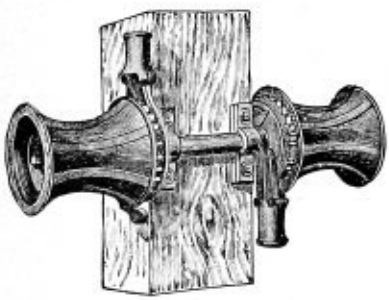
Complete assortment of these goods in our Marine catalog. If interested, send for it.

PUMP BRAKE RATCHET GYPSY WINDLASS



No.	Chain, inches	Diam. of Head on Outside End, inches	Length of Head, inches	Diameter at Middle, inches	Width of Bitts Outside, inches	Price
A	3/8	8 1/4	8 1/2	5 1/2	12	$30.00
B	1/2	10	10	7	14	38.00
C	5/8	12	12	7 1/4	15	48.00
D	11/16	13	13	7 1/2	16	56.00
E	3/4	13 1/2	14 1/2	8	17	65.00
F	13/16	14 1/2	16 1/2	8 1/2	18	76.00
G	7/8	15 1/2	18	9 1/4	19	85.00
H	1	16	20	10	20	125.00

IMPROVED GYPSY WINDLASS



No.	Length of Head inches	Diam. of Head on Outside End, in.	Width from Outside to Outside of Bitts, in.	Size of Chain inches	Price Each Plain	Net Extra for Galvanizing
0 E	5 1/4	4 1/2	6	3/16	$8.00	$1.50
1 D	6	5	8	1/4	9.00	2.00
2 C	6 1/2	7 1/2	10	5/16	10.00	3.00
3 B	7	7 1/2	12	3/8	12.00	12.00
A 0	8	8 1/2	12	3/8	16.00	6.00
B 1	9 1/2	10	14	1/2	21.00	8.00
C 2	12	11 1/2	16	5/8	28.00	28.00
D 2 1/2	13	13	18	11/16	33.50	37.50
E 3	14 1/2	13 1/2	20	3/4	44.00	44.00
F 3 1/2	16 1/2	14 1/2	22	13/16	53.00	53.00

Galvanized Gypsy Windlasses up to No. B 1 in stock. Larger sizes to order on short notice.

In ordering, please state width of the bitts from outside to outside.

CAVEL CAPSTANS

The usual lever is a piece of 1 1/2 inch pipe about 4 feet long. To lubricate these capstans, oil through either horn.

Height inches	Tip to Tip of Horns, inches	Diameter Base inches	Weight pounds	Price Each
18	16 1/2	14 1/2	115	$12.00

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

Side Suction, for Hose

EDSON'S DIAPHRAGM FORCE PUMP

ALL GALVANIZED IRON

For Both Side and Bottom Suction

Size Pump	Capacity per Hour gals.	Diameter of Suction inches	Diameter of Discharge inches	Each	
				Side Suction	Bottom Suction
No. 0	1,500	2½	2	$20.00	$18.00

HOSE AND FITTINGS FOR THE EDSON PATENT DIAPHRAGM PUMPS

BLACK IRON PIPE

Any length up to 20 feet

Internal Diameter, inches	2½	3	4
List Price, per foot	$0.57½	0.75½	1.08

SMOOTH BORE SUCTION HOSE

We carry in stock in 10, 12, 15 and 20 ft. lengths

Internal Diameter, inches	2½	3	4
List Price, per foot	$3.50	4.50	6.50

HOSE COUPLINGS

Iron Pipe, inches	2½	3	4
List Price, per pair	$4.13	6.75	12.50

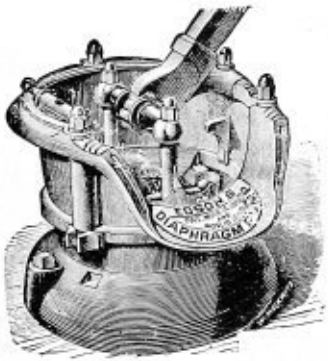
GALVANIZED IRON LEAKY HOSE NOZZLES

BLACK IRON FOOT VALVES

BLACK IRON STRAINER

Size, inches	2½	3	4
Leaky, each	$1.50	2.00	3.30
Foot Valve, each	3.30	3.90	7.30
Black Iron, "	1.50	2.00	....

EDSON'S PATENT DIAPHRAGM FREE PUMP



Bottom Suction, for Iron Pipe

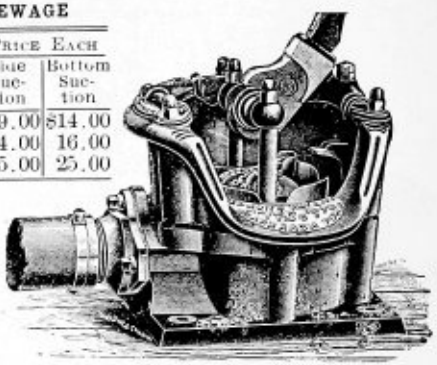
FOR WATER, GRAVEL AND SEWAGE

Size Pump	Length of Stroke inches	Capacity per Stroke gallons	Diameter of Suction inches	Price Each Side Suction	Price Each Bottom Suction
No. 2	2¾	½	2½	$19.00	$14.00
No. 3	3	1	3	24.00	16.00
No. 4	4	2	4	35.00	25.00

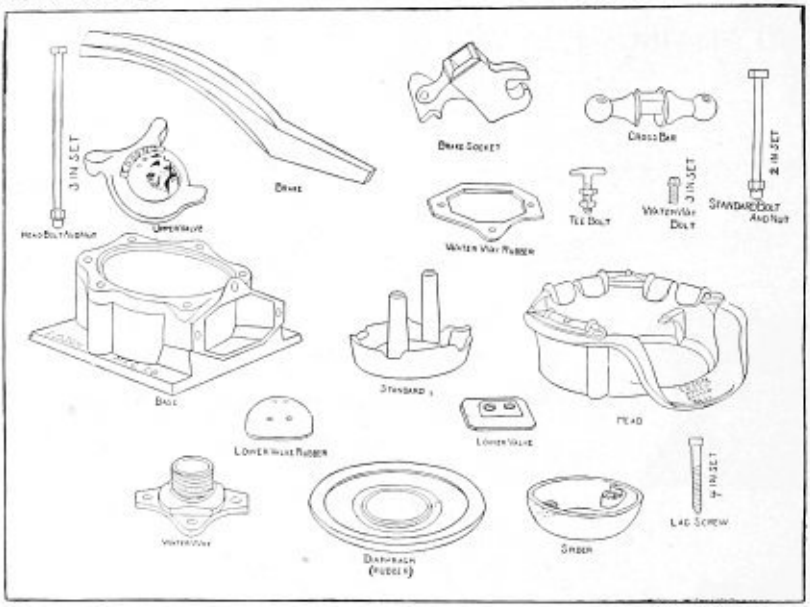
Note Capacity

Capacity operated by one man:
No. 2, 1,800 gallons per hour.
No. 3, 4,000 " "
No. 4, 6,000 " " .

Illustrations show parts of Side Suction Pump



Side Suction, for Hose



Description	Side Inlet For No. 2 Pump	Side Inlet For No. 3 Pump	Side Inlet For No. 4 Pump	Description	Bottom Inlet For No. 3 Pump	Bottom Inlet For No. 4 Pump
Base	$4.75	$6.00	$9.60	Base	$4.50	$9.25
Head	3.00	3.80	6.50	Head	3.80	6.50
Standard	.90	1.00	1.60	Standard	1.00	1.60
Spider	.50	.90	1.00	Spider	.90	1.00
Brake Socket	.70	.70	1.35	Brake Socket	.70	1.35
Upper Valve	.65	.65	1.10	Upper Valve	.30	.75
Lower "	.70	.80	.80	Lower "	.25	1.00
Tee Bolt	.35	.35	.65	Tee Bolt	.35	.65
Head Bolt and Nut, 3 in set	.25	.25	.30	Head Bolt and Nut, 3 in set	.25	.30
Brake	2.25	2.50	3.50	Stand. Bolt and Nut, 2 in set	.25	.30
Lag Screw, 4 in set	.08	.10	.12	Brake	2.50	3.50
Cross Bar	.40	.45	.75	Lag Screw, 4 in set	.10	.12
Stand. Bolt and Nut, 2 in set	.25	.25	.30	Cross Bar	.45	.75
Lower Valve, Rubber	.30	.35	.45	Upper Valve Rubber	.45	.85
Diaphragm	2.00	2.25	3.50	Lower " "	.40	.85
Waterway	1.70	2.25	3.25	Diaphragm	2.25	3.50
" Bolt, 3 in set	.15	.20	.20	Lower Valve Washer	.10	.25
" Rubber	.30	.40	.45	" " Guard	.10	.25
				Upper Valve Bolt, 2 in set	.05	.10
				" " Thumb Screw	.25	.45
				Lower Valve Guard Bolt	.25	.35
				" " Bolt	.15	.25
				Upper Valve Guard	.15	.35

Where more than one article in set, the price is for each one.

SPIRAL HAND SUCTION PUMP

GALVANIZED WROUGHT IRON

This Pump combines great strength as compared with the ordinary tin article, as the entire Suction Tube is made of one piece.

We carry in stock in lengths from 3 to 12 feet.

1½ inch inside diameter	Per lineal foot,	$0.55
2 " " "	" " "	.60
2½ " " "	" " "	.65
3 " " "	" " "	.70
3½ " " "	" " "	.75
4 " " "	" " "	.80

Pumps less than 5 feet in length, charged as 5 feet.

GALVANIZED HAND PUMPS

YACHT PATTERN

Length Under Spout	20 inch, Each	24 inch, Each	30 inch, Each	36 inch, Each	48 inch, Each
Diameter 1½ in.	$2.00	$2.00	$2.00	$2.25	$2.50
" 2 "	2.25	2.25	2.25	2.50	2.75
" 2½ "	2.50	2.50	2.50	2.75	3.00
" 3 "	.....	.....	.....	.....	.....

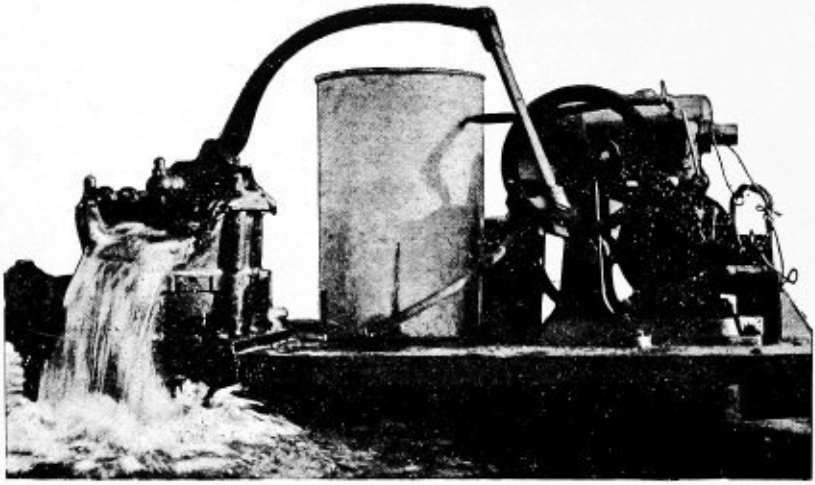
"WURKEZE" BILGE PUMPS

POLISHED BRASS CYLINDER

Always ready and easy to operate. All brass, cannot rust. Perfect construction.

Size	Height	Diameter	Length of Hose	Capacity per minute	Each
No. 1	16 in.	1 1/16 in.	5 ft.	6 gal.	$5.00
No. 2	17 "	1½ "	5 "	12 "	7.50

ALPHA PORTABLE PUMPING OUTFIT



Compact, Simple, Durable

Capacity per hour.....4000 gallons
Cost of operating per hour.....5 cents

Outfit consists of the Alpha 1 H. P. Valveless Gasoline Engine with gasoline tank attached, properly fitted and secured to a specially designed pump jack, having double reduction cut spur gears with ratio of 25 to 1. Special spark coil, attached and properly connected to a high grade igniting magneto, made expressly for this work. Coil and magneto are firmly fastened to jack and connected to the igniter on engine. The muffler is attached to exhaust flange by standard pipe fittings and large galvanized iron water tank is connected with water jacket by flexible pipe. Pump jack is fitted with connecting rod and pump lever. All securely fastened to an oak platform ready for the attachment of pump.

Castings best quality grey iron; forged steel crank shaft and steel wrist pin. Motor shaft bearings and connecting rod best quality phosphor bronze of liberal proportions to insure durability. Cylinder and shaft bearings lubricated by patented device of unique construction, which although always under the control of the operator, is practically automatic.

DIMENSIONS

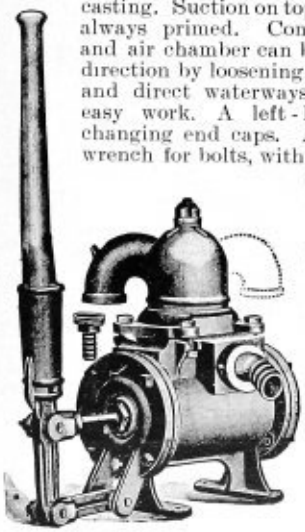
Height, extreme.....27 inches
Width, extreme.....28 inches
Length, extreme..... 60 inches
Weight, complete.....400 pounds

Each complete, including pump $150.00

TURRET TANK PUMP

A Good Cheap Iron Pump

All valves on top and quickly repaired by taking out the bolts in top casting. Suction on top, keeping valves always primed. Combination spout and air chamber can be turned in any direction by loosening the nut. Open and direct waterways for quick and easy work. A left-hand pump by changing end caps. A malleable iron wrench for bolts, with one end a hose spanner, goes with each pump.



Suction...2 in.

Discharge.1 in.

Each....$10.00

THE "TIGER" DOUBLE-ACTING FORCE PUMP

With Air Chamber and Adjustable Handle, Side Discharge

The "Tiger" Double-Acting Force Pump is especially adapted for elevating water from cisterns to tanks in upper stories of residences. It is also used for cleaning and filling boilers and for fire protection, or can be used as a deck pump and many other purposes. All sizes are fitted with all brass valves. Brass plugs are provided for draining cylinder to prevent freezing, and also for priming when necessary. The air chamber can be reversed so that discharge may be used on either side.

The suction and discharge are always fitted for iron pipe unless otherwise ordered, but can be fitted for hose or lead pipe if specified.

No.	Diameter Cylinder	Stroke	Suction Fitted for	Discharge Fitted for	Each Iron	Each, Brass Lined Cylinder
1	2½ in.	4 in.	1¼ in. pipe	1 in. pipe	$16.00	$18.00
2	3 in.	4 in.	1½ in. pipe	1¼ in. pipe	18.00	21.00

CHALLENGE DOUBLE-ACTING FORCE PUMPS

Single Lever

All "Challenge" Pumps have brass-cased piston rods, brass valves and seats, and as Cylinders are either brass lined or brass working parts are unaffected by acid or salt water. Large air chamber.

No.	Diameter Cylinder	Suction	Discharge	Single Lever Brass Lined	Double Lever Brass Lined
2	2½ in.	1¼ in.	...	$27.00	.....
4	3 "	1¼ "	...	28.00	.....
8	4 "	1½ "	1¼	30.00	$35.00
12	5 "	2 "	1½	40.00	45.00
16	6 "	2½ "	2	50.00	55.00

Double Lever

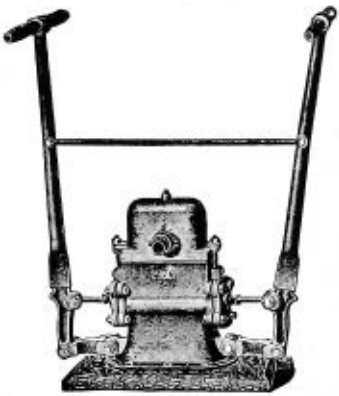
PEARSON DOUBLE-ACTING FORCE PUMPS

No. 2, Single Lever

An efficient pump for general use. Valves are easy of access, by unscrewing the bolts and lifting off the air chamber. Mounted on plank; is fitted for either iron pipe or hose, as desired.

BRASS LINED

No.	Size Cylinder inches	Suction inches	Discharge inches	Stroke inches	Price Each
2	3	1½	1¼	5¼	$27.00
3	5	2½	2	6	45.00



No. 3, Double Lever

COMBINATION BOILER TEST AND HAND FEED PUMPS

Brass Fitted

This is a double-acting pump of special design and construction, capable of being worked by one man against 500 pounds pressure. It has brass piston (packed), brass piston rod, and forged steel connections.

Length of stroke, 5 inches. Suction for 1 inch pipe.

Discharge for ¾ inch pipe. Weight, including base plate, 60 pounds.

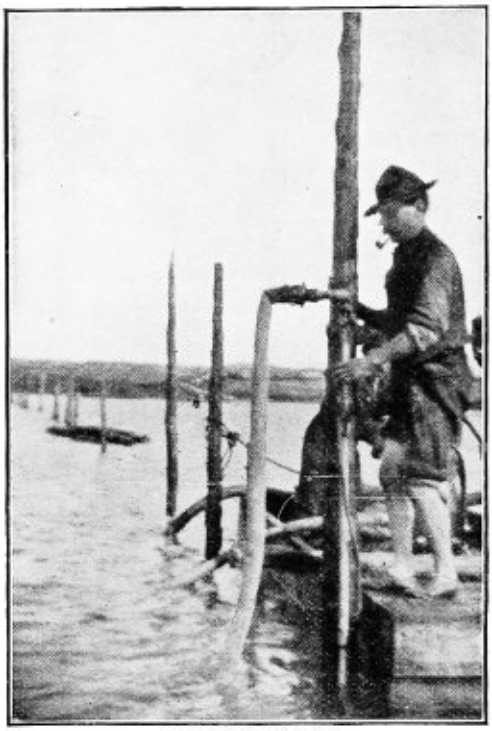
The illustration shows base for fastening down, but where the pump is intended for general purposes and to be moved from place to place (for inspectors or boiler-shop testing, etc.), we can substitute a long base on which the operator may stand. Price the same for either style, but unless otherwise instructed we will consider that the square base as illustrated is wanted.

Repacking or cleaning is conveniently done by simply unbolting and lifting the pump off from its base.

Price each $25.00

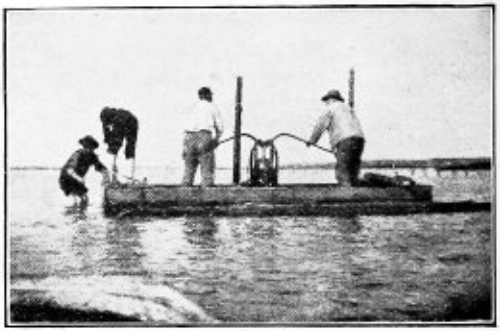
EDSON PILE SINKING OUTFIT

FOR USE IN SAND AND GRAVEL BOTTOMS



Starting the Pile

Pile Half-way Down



Pile Down

No. 1. Capacity 1,200 gallons per hour. One man. For light work on piles less than 5 inches in diameter at the butt, to be sunk in places to be covered by water.

No. 3. Capacity 3,500 gallons per hour. Two men. For heavier work, on piles having a diameter of from 5 to 12 inches at the butt, to be sunk in places covered with water. A very powerful outfit.

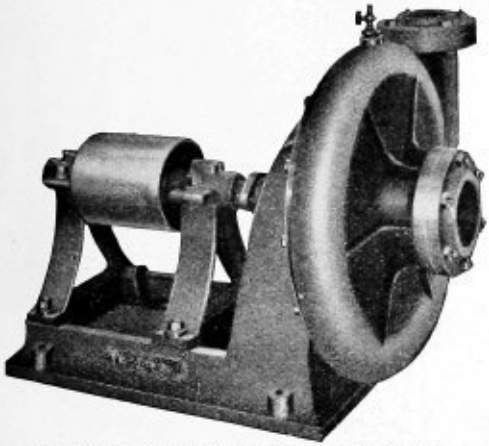
No. 4. (new size). Capacity 6,000 gallons per hour. Two to four men. For sinking very large piles in places covered by water or in dry sand where the water has to be forced a long distance.

With Suction Hose Feet Long	With Pressure Hose Feet Long	Each Complete		
		No. 1	No. 3	No. 4
10	20	$53.00	$108.50	$149.00
10	25	55.50	.....	.....
15	20	58.25	116.00	160.00
15	25	60.75	118.25	164.00
15	50	73.25	129.50	180.00

Operating on Land

CENTRIFUGAL PUMPS

HORIZONTAL



Horizontal Side Suction Centrifugal Pump

This pump is designed and constructed throughout on very liberal lines. The case or shell is of the solid type, very heavy, and the runner of large diameter, adapting the pump for slow speed.

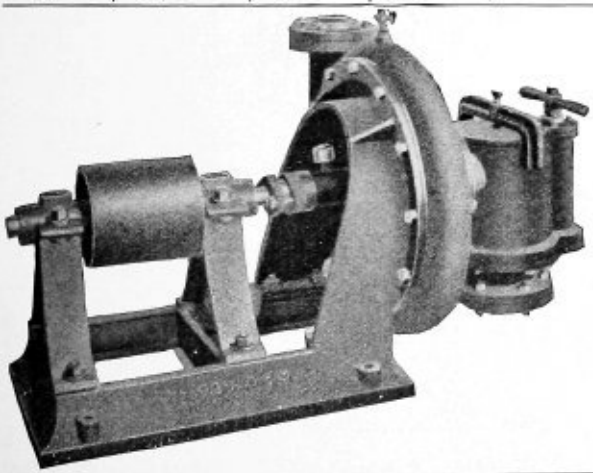
The inside of the case is machine finished, and the runner machined and accurately fitted to it; and our construction gives a closer running fit and greater efficiency than can be obtained in the old style split case.

The shaft is large and the bearings are generously proportioned, an ample stuffing box and gland being provided. The discharge can be readily adjusted at any angle. All parts are accurately interchangeable and any part can be readily duplicated.

Brass fitted pumps have runner and shaft of brass.

These pumps can be fitted with tight and loose pulleys, if desired, at an extra charge.

No. Pump	Capacity Gallons	Size of Pipe		Pulley		Price Iron	Price Brass	Brass Fitted Extra
		Discharge	Suction	Diameter	Face			
1	30	1 in.	1½ in.	4 in.	3 in.	$30.00	$35.00	$6.00
1½	70	1½ "	2 "	5 "	5 "	45.00	75.00	15.00
1¾	90	2 "	2½ "	6 "	5 "	60.00	100.00	18.00
2	120	2 "	3 "	6 "	6 "	75.00	140.00	22.00
2½	185	2½ "	3½ "	7 "	6 "	90.00	165.00	27.00
3	265	3 "	4 "	7 "	8 "	110.00	200.00	30.00
3½	360	3½ "	4½ "	8 "	8 "	120.00	230.00	40.00
4	470	4 "	5 "	10 "	8 "	130.00	250.00	48.00
5	735	5 "	6 "	10 "	10 "	165.00	410.00	72.00
6	1,060	6 "	8 "	14 "	12 "	225.00	600.00	108.00
8	2,000	8 "	10 "	20 "	12 "	310.00	.....	130.00
10	3,000	10 "	12 "	24 "	12 "	395.00	.....	265.00
12	4,300	12 "	15 "	30 "	14 "	500.00	.....	.....
15	7,000	15 "	18 "	Special	Special	850.00	.....	.....
18	10,000	18 "	20 "	"	"	1,300.00	.....	.....



HORIZONTAL WITH PRIMER

Same pump as above with the exception that a hand suction primer is added. At times it is desirable to prime the smaller pumps by hand.

This may be done by opening the air cock at the top of the shell and then using the hand pump on the primer until the water flows from the air cock, when the pump can be started.

On sizes above 8-inch it is advisable to use an ejector and either a foot valve or a flap valve. No foot valve or flap valve is necessary when the hand primer is used.

In this illustration the method of attaching the shell to the hood on the upper pump is clearly shown.

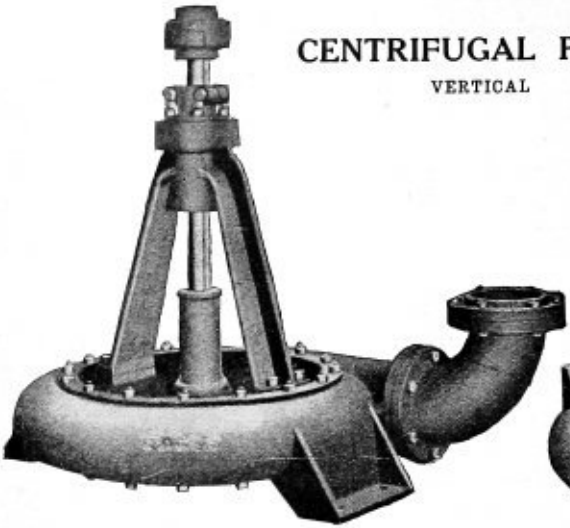
Brass fitted pumps have runner and shaft of brass.

These pumps can be fitted with tight and loose pulleys, if desired, at an extra charge.

No. Pump	Capacity Gallons	Size of Pipe		Pulley		Price Iron	Price Brass	Brass Fitted Extras
		Discharge	Suction	Diameter	Face			
1½	70	1½ in.	2 in.	5 in.	5 in.	$60.00	$115.00	$15.00
1¾	90	2 "	2½ "	6 "	5 "	75.00	150.00	18.00
2	120	2 "	3 "	6 "	6 "	95.00	200.00	22.00
2½	185	2½ "	3½ "	7 "	6 "	110.00	235.00	27.00
3	265	3 "	4 "	7 "	8 "	135.00	280.00	30.00
3½	360	3½ "	4½ "	8 "	8 "	145.00	310.00	40.00
4	470	4 "	5 "	10 "	8 "	160.00	350.00	48.00
5	735	5 "	6 "	10 "	10 "	200.00	550.00	72.00
6	1,060	6 "	8 "	14 "	12 "	270.00	800.00	108.00
8	2,000	8 "	10 "	20 "	12 "	375.00	.....	130.00

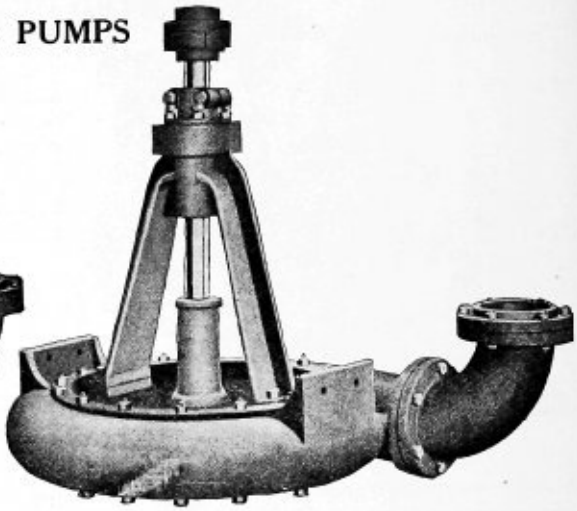
CENTRIFUGAL PUMPS

VERTICAL



Vertical Submerged Centrifugal Pump with Feet

This pump is intended to be entirely submerged in the liquid to be pumped and needs no priming. The weight of shaft is entirely supported by the yoke, which has a bearing with adjustment at the top, making a very durable pump, there being no step bearing inside the shell to cut and wear. By simply removing the nuts at the top of the shell, all of the running parts, including the runner, can be lifted out for inspection.

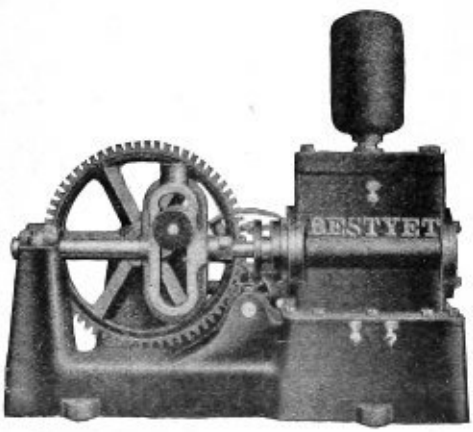


Vertical Submerged Centrifugal Pump with Timber Pieces

This pump is arranged with timber castings for bolting to vertical timbers. In irrigation work, where the pumps are usually placed in a pit at a considerable depth, vertical timbers to support the pump shell are usually used.

No. Pump	Capacity Gallons	Size Discharge Pipe	Pulley Diameter	Pulley Face	Coupling Bored for	Price Iron	Price Brass
1½	70	1½ inches	5 inches	5 inches	⅞ inch shaft	$42.00	$75.00
1¾	90	2 "	6 "	5 "	1 " "	53.00	100.00
2	120	2 "	6 "	6 "	1⅛ " "	69.00	140.00
2½	185	2½ "	7 "	6 "	1⅛ " "	84.00	170.00
3	265	3 "	7 "	8 "	1⅜ " "	100.00	225.00
3½	360	3½ "	8 "	8 "	1⅜ " "	109.00	235.00
4	470	4 "	10 "	8 "	1¼ " "	117.00	260.00
5	735	5 "	10 "	10 "	1⅝ " "	147.00	420.00
6	1,060	6 "	14 "	12 "	1⅝ " "	179.00	580.00
8	2,000	8 "	20 "	12 "	2⅛ " "	282.00	.....
10	3,000	10 "	24 "	12 "	2½ " "	350.00	.....
12	4,300	12 "	30 "	14 "	2¾ " "	420.00	.....
15	7,000	15 "	Special	Special	Special	600.00	.....
18	10,000	18 "	"	"	"	950.00	.....

BEST YET POWER PUMP

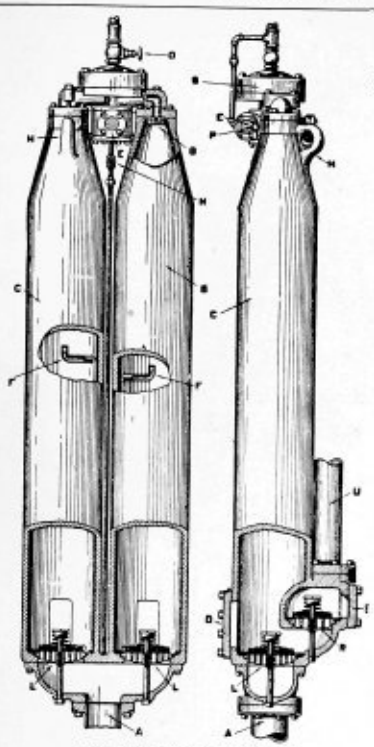


Cylinder 4½ by 6 in. stroke.
Capacity, 2,000 gallons per hour.
Gearing 5 to 1.
Pulley 14 in. by 4 in. face
Suction pipe 2 in.; discharge pipe 1½ in.
Floor space 36 in. by 19 in.
Pulley speed 250 revolutions, for rated capacity.
Weight 450 lbs.
Each..... $80.00

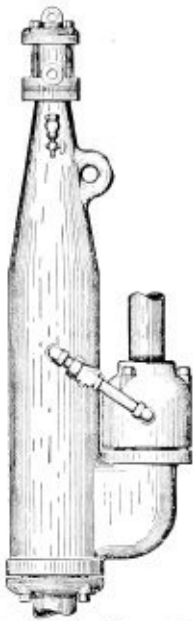
These pumps are built to work against **one hundred pounds** pressure, or about 230 ft. high or less, and at the same time handling either hot or cold liquids. These pumps can be used for boiler feeding, or they can be used for tank work. They have the same lifting capacity as any steam pump and can replace them for all kinds of work where power is at hand or will be put in. They can be run by belt to the pulley or can be connected direct. It is fitted with rubber **valves**, made standard size, resting on brass seats, with brass **stems** and springs, and the valve seats have large openings. The **valves** are made to handle hot or cold liquids. The piston is made **much** the same as the ordinary steam pump and is packed with the square rubber packing. This makes a pump capable of handling **either** hot or cold liquids and against any pressure for which the **pump** may be built.

It has only one set of gears with **wide** face and large, well-made teeth, to give ample strength and **smooth** running.

EMERSON STEAM PUMPS



Emerson Steam Pump



Emerson Junior Steam Pump

EMERSON STEAM PUMP

Large percentages of sand, gravel or mud in the water being pumped does not injure the pump or interfere with its working.

It will handle material successfully that would be entirely impractical to handle at all with other pumps.

There is no slip or leakage of either steam or water, hence its full capacity and economy will always be maintained regardless of the age of the pump.

It does not require a priming pipe.

It is noiseless in operation.

It is entirely self-contained.

It is very much more economical in steam consumption than any other of its class.

It uses very much less steam per horse-power developed than a Duplex Pump or a Pulsometer performing the same service.

The steam valve motion being positive, shaking or the motion of a vessel, does not affect its working in the least.

The cost of maintenance is less than any other, as the working parts are very few and inexpensive if they should ever need renewing.

It has no adjustments to make, or that can be made, so that the possibility of derangement by unskilled operators is very remote.

No.	Diam. of Cylinders inches	Length of Cylinders feet	Size of Steam Pipe inches	Size of Suction inches	Size of Discharge inches	Capacity in Gallons per Minute	Capacity in Gallons per Hour	Capacity in Gallons per Day (24 Hours)	Dimensions Over All inches			Approximate Weights pounds	Price List
									Breadth	Width	Height		
1	6	6	¾	3	2½	225	13,500	324,000	16½	18	97½	950	$275
2	8	6½	1	4	3	415	24,900	597,600	21½	21	104	1,375	350
3	10	7	1¼	5	4	725	43,500	1,044,000	26	24	113	1,900	500
4	12	8	1½	6	5	1,200	72,000	1,728,000	29½	27½	127	3,100	700
5	16	8	2	8	6	2,100	126,000	3,029,000	43¼	33	132	4,400	1,150
6	20	8	2½	10	8	3,275	196,500	4,716,000	51½	36¾	135	5,400	1,700
7	24	8	3	12	10	4,700	282,000	6,768,000				7,000	2,200

EMERSON JUNIOR STEAM PUMP

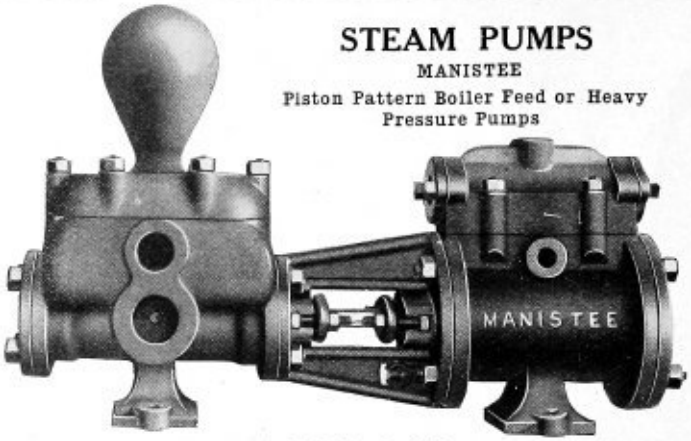
Is a Single Cylinder Pump, built on same lines as the Emerson Steam Pump; lighter in weight

Sizes	Suction inches	Discharge inches	Steam Pipe inches	Weight pounds	Each
A	3	2½	½	219	$100.00
B	4	3	¾	290	125.00
C	5	4	¾	320	175.00

STEAM PUMPS

MANISTEE

Piston Pattern Boiler Feed or Heavy Pressure Pumps



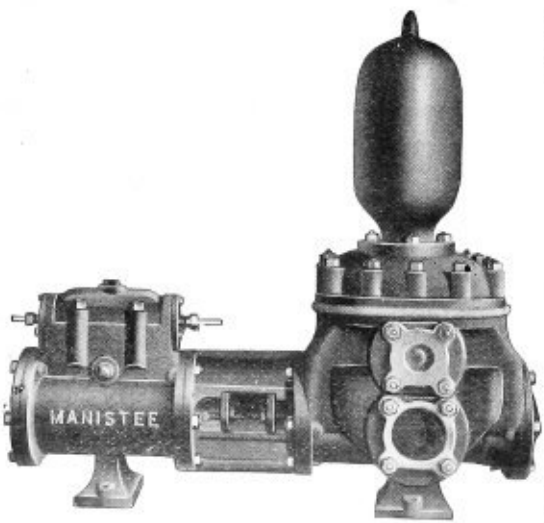
5x3x6 inch Boiler Feed Pump

This cut shows the design used for pumps having steam cylinders of 6 inch diameter and under

Steam Cylinder	Water Cylinder	Stroke	Gallons per Stroke	Gallons per Minute	Gallons per Hour	Steam Pipe	Exhaust Pipe	Suction Pipe	Delivery Pipe	Floor Space in Inches	Horse Power	Weight	Price
4	2 3/8	5	.096	14	840	3/8	1/2	1 1/4	1	27x7	60	200	$100.00
5	3	6	.183	25	1,500	1/2	3/4	2	1 1/2	31x8	150	225	150.00
6	3 5/8	8	.357	45	2,700	3/4	1	2 1/2	2	38x10	250	400	200.00
7	4	8	.4352	58	3,500	1	1 1/4	2 1/2	2	42x11	350	600	250.00
8	5	10	.85	100	6,000	1 1/4	1 1/2	3	2 1/2	51x12	600	800	300.00
10	6	12	1.47	147	8,820	1 1/2	2	4	3	55x14	1,000	1,200	400.00
12	7 1/4	12	2.15	215	12,900	2	2 1/2	4	3	62x18	1,500	1,600	475.00
14	8	12	2.61	261	15,660	2	2 1/2	6	5	66x20	1,650	....	.....
16	10	18	6.12	408	24,480	2 1/2	3	8	6	78x28	2,500	2,800	800.00
18	12	24	11.75	587	35,220	3 1/2	4	8	6	108x28	....	....	.....
20	14	24	16.00	799	47,900	3 1/2	4	10	8	114x30	....	....	.....
27	16	24	20.80	1,044	62,640	4	4 1/2	12	10	.....	....	....	.....
30	18	24	26.43	1,767	106,000	5	6	14	12	.....	....	....	.....

Also larger or smaller sizes or other combinations of cylinders.

TANK PUMPS

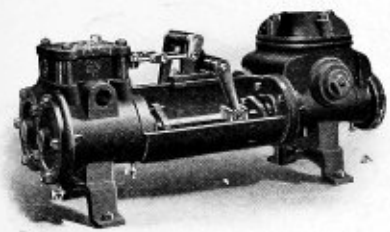


Steam Cylinder	Water Cylinder	Stroke	Gallons per Stroke	Gallons per Minute	Gallons per Hour	Steam Pipe	Exhaust Pipe	Suction Pipe	Delivery Pipe	Floor space	Weight / Price
4	3	6	.18	25	1500	3/8	1/2	2	1 1/4		
4	3 5/8	6	.26	40	2400	3/8	1/2	2	1 1/2		
4	4	6	.32	50	3000	3/8	1/2	2	2		
4	3	8	.24	25	1500	3/8	1/2	2	1 1/4		
4	3 5/8	8	.35	45	2700	3/8	1/2	2	1 1/2		
4	4	8	.43	58	3500	3/8	1/2	2	2		
5	4	6	.32	50	3000	1/2	3/4	2	2	31x8	
5	5	10	.85	92	5500	3/4	1	3	2 1/2		
5	6	10	1.22	132	7900	3/4	1	4	3		Weight and Prices on Application
5	7 1/4	10	1.78	193	11500	3/4	1	5	4		
5	8	10	2.17	235	14000	3/4	1	5	4		
6	4	8	.43	58	3500	3/4	1	2 1/2	2	38x10	
6	5	12	1.02	100	6000	3/4	1	4	3	48x14	
6	6	12	1.46	146	8700	3/4	1	4	3	49x14	
6	7 1/4	12	2.14	214	12800	3/4	1	5	4		
6	8	12	2.60	260	15600	3/4	1	5	4		
8	6	12	1.46	146	8700	1	1 1/4	4	3		
8	7 1/4	12	2.14	214	12800	1	1 1/4	5	4	55x16	
8	8	12	2.61	260	15600	1	1 1/4	5	4	57x16	
10	7 1/4	12	2.14	214	12800	1 1/4	1 1/2	5	4		
10	8	12	2.61	260	15600	1 1/4	1 1/2	5	4		
12	8	12	2.61	260	15600	1 1/2	2	5	4	66x14	

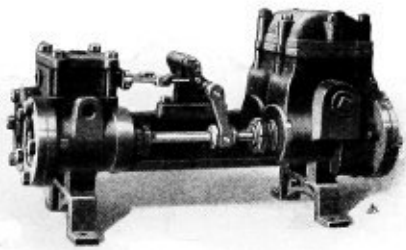
GARDNER DUPLEX STEAM PUMPS

PACKED PISTON PATTERN

BOILER FEEDERS



No. 1½ Pump



Nos. 2, 3, and 4 Pumps

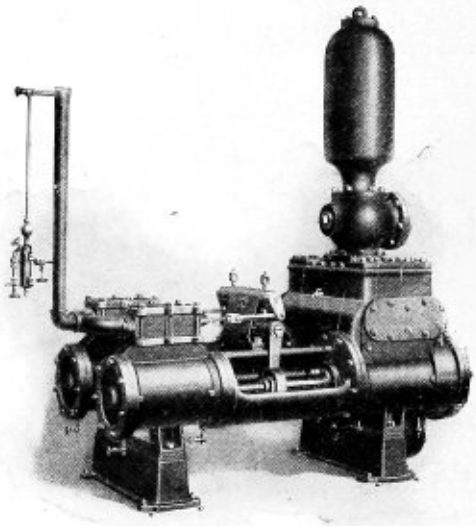
The sizes listed represent the standard feed pumps for working pressures not exceeding 175 lbs. per square inch. Sizes to No. 4 inclusive, are fitted with inserted brass tube linings, while sizes No. 4 A and upwards, have the cast brass removable type. Nos. 2, 3, and 4 can be fitted with this style at slight additional cost.

No.	Diameter of Steam Cylinders	Diameter of Water Cylinders	Length of Stroke	H. P. Boiler will Feed, Based on 30 Pounds Water per Hour, at Stated Number of Strokes		Sizes of Pipe for Short Lengths to be Increased as Length Increases			
				Strokes	Horse Power	Steam Pipe	Exhaust Pipe	Suction Pipe	Discharge Pipe
0	2½	1½	3	70	40	⅜	½	1	¾
00	3	2	3	60	70	⅜	½	1¼	1
1½	4	2½	4	50	120	½	¾	1½	1¼
2	4½	3	4	50	180	½	1	2	1½
3	5¼	3½	5	50	350	¾	1¼	2½	2
4	6	4	6	50	480	1	1½	3	2
4A	7	4½	6	50	625	1¼	1½	4	3
5	7	4½	10	40	825	1½	2	4	3
6	8	5	10	40	1,000	1½	2	5	4
7	10	6	10	40	1,500	2	2½	5	4
7A	10	6	12	40	1,800	2	2½	5	4
8	12	7	12	40	2,400	2½	3	6	5

Pumps are furnished both Regular and Brass fitted. Regular fitted Pumps have brass water cylinder linings iron fibrous packed pistons and steel rods. Brass fitted have in addition to the brass linings, brass pistons brass or brass lined packing glands on Pump end and Tobin bronze rods.

GARDNER DUPLEX SYSTEM PUMPS

PACKED PISTON PATTERN — LOW SERVICE OR TANK



Low Service Pump (10 x 10 x 12)

These pumps are intended for pumping liquids to limited heights and distances with ordinary steam pressure. Used largely for railway water stations, in breweries, sugar refineries, distilleries, oil works, and in ice factories for brine circulation. They have packed water pistons of iron or brass.

TABLE OF SIZES AND CAPACITIES

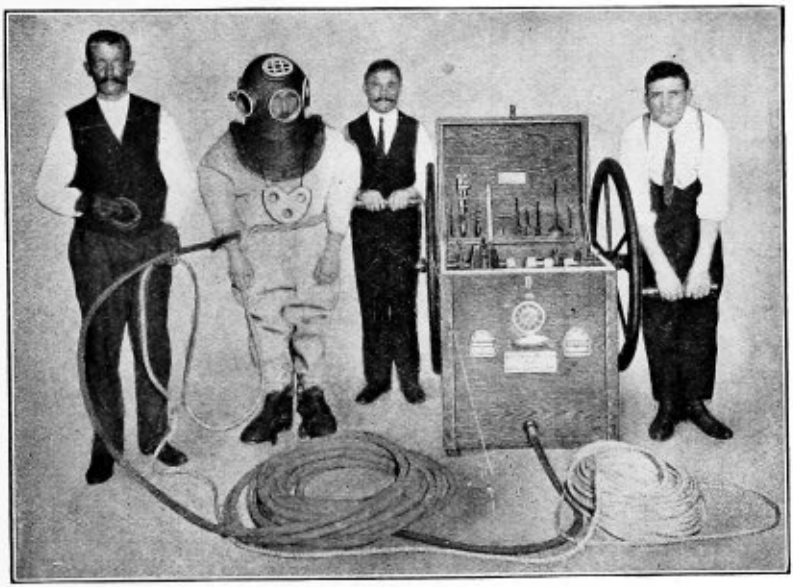
No.	Diameter of Steam Cylinders	Diameter of Water Plungers	Length of Stroke	Gallons Delivered per Minute by Both Plungers, at Stated Number of Strokes	Sizes of Pipes for Short Lengths, to be Increased as Length Increases			
					Steam Pipe	Exhaust Pipe	Suction Pipe	Discharge Pipe
22	4½	3¾	4	40 to 80	½	1	2½	2
23	5¼	4¾	5	75 " 150	¾	1¼	3	2½
24	6	5¾	6	130 " 260	1	1½	4	3
24A	7	5	6	100 " 200	1¼	1½	4	3
25	7	5	10	133 " 220	1½	2	4	3
25A	7	6	10	180 " 300	1½	2	5	4
26	8	6	10	180 " 320	1½	2	5	4
27	8	7	10	245 " 410	1½	2	6	5
28	8	8	10	325 " 540	1½	2	6	5
28A	8	8½	10	365 " 610	1½	2	6	5
28B	8	10	12	610 " 1015	1½	2	8	7
29	10	7	10	245 " 410	2	2½	6	5
30	10	8	10	325 " 540	2	2½	6	5
30A	10	10	12	610 " 1015	2	2½	8	7
30B	10	12	12	585 " 1170	2	2½	10	8
30C	10	14	12	800 " 1600	2	2½	12	10

All the above are furnished with brass water cylinder linings; The brass fitted have in addition, brass pistons, brass or brass lined stuffing box glands and Tobin bronze rods.

Larger sizes on application.

DIVING APPARATUS
AND
SUBMARINE APPLIANCES

EVERY ARTICLE GUARANTEED



Used Exclusively by the U. S. Navy on all Warships

Special Air Pump, Three Cylinder, Single Acting

Western Representatives of A. Schrader's Sons Inc. Schrader's Diving Apparatus has been noted for the high quality of material used and the excellence of workmanship since 1844.

The experience gained in sixty-four years, coupled with the personal attention of the proprietors to all details, have produced Air Machines so simple that any man of ordinary intelligence may understand all their workings; so efficient that the supply of air thrown is of exceptional volume and unsurpassed purity, and so easily operated as to enable one man to do the work where formerly two men were required.

All other parts are also made with the one point in view of having them superior to anything on the market, and a complete guarantee covers each and every article.

We can recommend these appliances and guarantee them to be all they are represented to be by the manufacturers.

GEO·B·CARPENTER & CO.

DIVING APPARATUS No. A

THIS OUTFIT FOR ANY DEPTH AND FOR ONE OR TWO DIVERS

Complete in all respects for One or Two Divers, as supplied for General Use of Contractors, Divers, etc.

1 U. S. Navy Engineer and U. S. Army Corp Standard Pump, two Cylinders, double action, with two Indicating Gauges to denote the air pressure and depth of each Diver. With Water Cistern around Cylinders for cooling the air; two Fly Wheels and packed in Oak Chest, with iron rings for lashing	$500.00
*1 Improved Quarter Turn-Screw Helmet, to receive air in head, or one to receive air in breast-plate, either style, including Safety Valve and Adjustable Regulating Valve	105.00
2 Rubber Diving Dresses, @ $50.00 each	100.00
150 ft. Air Hose (three pieces), with couplings	60.00
1 Set Improved Belt Weights, with detachable leads	27.50
1 pr. Diving Shoes, with lead or iron soles	15.00
2 prs. Diving Mittens (rubber or canvas), either style	10.00
1 pr. Rings and Clamps	5.00
1 Life or Signal Line (150 ft.)	2.50
1 pr. Cuff Expanders	5.00
6 ft. Snap Tubing, @ 60c	3.60
1 pr. Chafing Pants, with adjustable straps	4.00
2 prs. Diver's Stockings	2.50
2 Woolen Shirts and Drawers	10.00
2 prs. Woolen Mittens	2.50
6 Extra Bolts and Nuts for Helmet (spare)	3.00
1 Set Extra Couplings (spare)	2.00
1 yd. Rubber Cloth for repairs	3.00
1 pt. Can Rubber Cement for repairs	.75
1 Cutting Punch	.75
Complete Apparatus for one Diver	$862.10
Complete Apparatus for two Divers will include duplicate of above items, except the Air Pump	$1224.20

	Weights	Dimensions
1 Case—Pump	600 lbs.	27 in. x 34 in. x 41 in.
1 " Wheels	275 "	38 " x 40 " x 6 "
1 " Outfit	375 "	30 " x 24 " x 24 "

DIVING APPARATUS No. C

THIS OUTFIT FOR ANY DEPTH FOR ONE DIVER

Adapted for Work where it is necessary to remain a long time.

1 Air Pump, three Cylinders, single action, with Water Cistern around Cylinders to cool air, Indicating Gauge to denote air pressure and depth of Diver; two Fly Wheels and packed in Oak Case with bronze corners, handles and fittings; Removable Tool Chest for holding tools and spare parts	$400.00
*1 Improved Quarter-turn Screw Helmet, to receive air in head, or to receive air in breastplate, either Style, including Safety Valve and Adjustable Regulating Valve 3 Lights $100.00, 4 Lights	105.00
2 Rubber Diving Dresses, @ $50.00 each	100.00
150 ft. Air Hose (three pieces), with couplings	60.00
1 Set Improved Belt Weights, with detachable leads	27.50
1 pr. Diving Shoes, with lead or iron soles	15.00
2 prs. Diving Mittens (rubber or canvas), either style	10.00
1 pr. Rings and Clamps	5.00
1 Life or Signal Line (150 ft.)	2.50
1 pr. Cuff Expanders	5.00
6 ft. Snap Tubing @ 60c	3.60
1 pr. Chafing Pants, with adjustable straps	4.00
2 prs. Diver's Stockings (Woolen)	2.50
2 Woolen Shirts and Drawers	10.00
2 prs. Woolen Mittens	2.50
6 Extra Bolts and Nuts for Helmet (spare)	3.00
1 Set Extra Couplings (spare)	2.00
1 yd. Rubber Cloth for repairs	3.00
1 pt. Can Rubber Cement for repairs	.75
1 Cutting Punch	.75
Complete Apparatus	$762.10

	Weights	Dimensions
1 Case—Pump	487 lbs.	28 in. x 26 in. x 39 in.
1 " Wheels	400 "	42½ " x 44½ " x 6¾ "
1 " Outfit	375 "	30 " x 24 " x 24 "

* Bolt Helmet may be substituted at $25 additional cost.

Any article in above list not desired may be omitted, or additions of any separate parts, as shown on pages 229, 230 and 231, be made, with corresponding change in cost of outfit.

DIVING APPARATUS No. D

THIS OUTFIT FOR ANY DEPTH UP TO 90 FEET FOR ONE DIVER

1 Air Pump, Three Cylinders Single Action, Indicating Gauge to denote air pressure and depth of Diver; Two Fly Wheels; Two Handles and packed in Oak Chest, iron corners, with iron rings for lashing.	$250.00
*1 Improved Diving Helmet, to receive air in head, or one to receive air in breast-plate, either style, including Safety Valve and Adjustable Regulating Valve. 3 Lights 100.00, 4 Lights	105.00
2 Rubber Diving Dresses, @ $50.00	100.00
150 ft. Air Hose (three pieces), with Couplings	60.00
1 Set Improved Belt Weights,with detachable leads	27.50
1 pr. Diving Shoes, with lead or iron soles	15.00
2 prs. Diving Mittens (rubber or canvas), either style	10.00
1 pr. Rings and Clamps	5.00
1 Life or Signal Line (150 ft.)	2.50
1 pr. Cuff Expanders	5.00
6 ft. Snap Tubing, @ 60c	3.60
1 pr. Chafing Pants, with detachable straps	4.00
2 prs. Diver's Stockings (woolen)	2.50
2 prs. Woolen Mittens	2.50
2 Woolen Shirts and Drawers	10.00
6 Extra Bolts and Nuts for Helmet (spare)	3.00
1 Set Extra Couplings (spare)	2.00
1 yd. Rubber Cloth for repairs	3.00
1 pt. Can Rubber Cement for repairs	.75
1 Cutting Punch	.75
Complete Apparatus	$612.10

	Weights	Dimensions
1 Case— Pump	487 lbs	28 in. x 26 in. x 39 in.
1 " Wheels	275 "	38 " x 40 " x 6 in.
1 " Outfit	375 "	30 " x 24 " x 24 in.

*Bolt Helmet may be substituted at $25 additional cost.

DIVING APPARATUS, No. E.

This Outfit for any depth up to 30 feet for one Diver. Particularly adapted for water-works, examining ship's bottoms, repairing dams, laying pipes, dock and breakwater building, marine railways, etc.

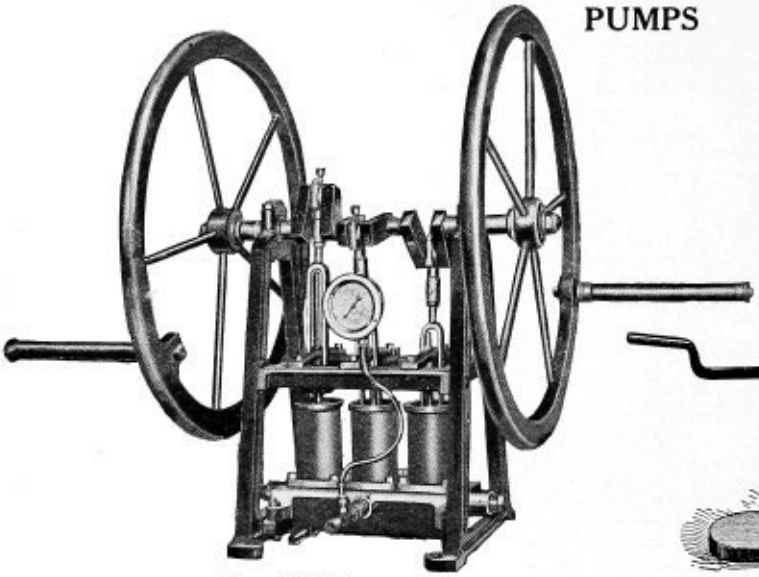
1 Two-Cylinder Air Pump, Capacity 30 ft. Depth of Water	$75.00
*1 Improved Quarter Turn Screw Helmet, to receive air in head, or to receive air in breast-plate, either style, including Safety Valve and Adjustable Regulating Valve 3 Lights $100.00, 4 Lights	105.00
1 Diving Dress	50.00
100 ft. Air Hose (two pieces), with couplings	40.00
1 Set Horse Shoe Weights, complete with ropes	15.00
1 pr. Diving Shoes, with lead or iron soles	15.00
1 pr. Wrist Expanders	5.00
1 pr. Rings and Clamps	5.00
1 pr. Diving Mittens (rubber or canvas), eiher style	5.00
1 pr. Chafing Pants, with adjustable straps	4.00
1 Life or Signal Line (100 ft.)	2.00
6 Extra Bolts and Nuts for Helmet (spare)	3.00
1 pr. Extra Couplings (spare)	2.00
1 yd. Rubber Repair Cloth	3.00
3 ft. Snap Tubing	1.80
1 pt. Can Rubber Cement, for repairs	.75
1 Cutting Punch	.75
Complete Apparatus	$332.30

	Weight	Dimensions
1 Case	360 lbs.	42 in. x 32 in. x 25 in.

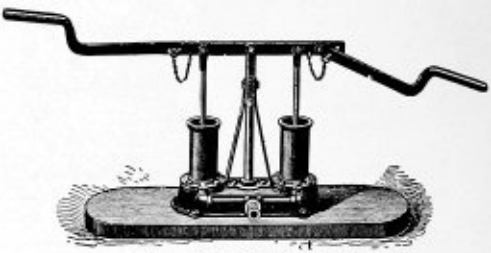
*Bolt Helmet may be substituted at $25 additional cost.

Any article in above list not desired may be omitted, or additions of any separate parts, as shown on pages 229 to 231, be made, with corresponding change in cost of outfit.

PUMPS



Three Cylinder



Two Cylinder Single Acting

Four Styles of Pumps are made as follows:

TWO CYLINDER DOUBLE ACTION PUMP

So constructed that two divers can be supplied with air at the same time or all the air given to one diver if it is necessary to descend to great depths. This Pump is the one supplied to the United States Navy Department and placed on all warships. Same as furnished with outfit No. A.....$500.00

THREE CYLINDER FINE FINISHED PUMP WITH WATER TANK

Designed for one diver and guaranteed to supply him with air at any depth to which he can go. Particularly used for all deep-sea work, sponge and pearl fishing, or where it is necessary for the diver to remain submerged for a long time. Same as furnished with outfit No. C.....$400.00

THE THREE CYLINDER PLAIN FINISHED PUMP

Designed for one diver and of the same general construction as the fine finished pump. No water tank is attached, nor are the parts so highly polished. This is the standard machine for wreckers, bridge and pier builders, engineers, contractors, steamship companies, etc., and it is guaranteed for depths up to 90 feet. Same as furnished in outfit No. D.....$250.00

THE TWO CYLINDER LEVEL PUMP WITH EITHER HORIZONTAL OR UPRIGHT HANDLES

Used for examination or other short period diving around waterworks, dry docks, marine railways, dams, docks, or breakwaters, where depths do not exceed 30 ft. Same as furnished with outfit No. E...$75.00

OAK CASE FOR TWO CYLINDER LEVER PUMP

Easily attached to pump furnished with our No. E outfit and adding greatly to its appearance. Special up-right handle in two pieces, also made so as to fit in case. Case is fitted with lock and two handles, and proves of great value if pump is frequently shipped from place to place. Price each..... $12.50

Quarter-Turn Screw Helmet

HELMETS

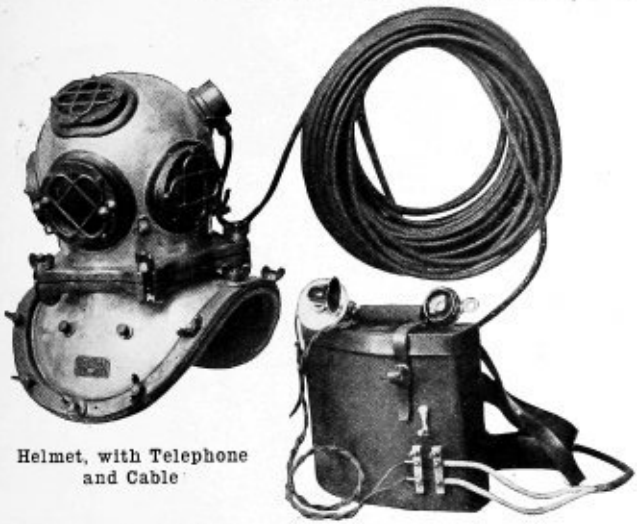
Are furnished in either Bolt or Screw style with three or four windows and a choice of Regulating Escape Valve or Inside Push Button release. All Helmets are designed to fit without causing unnecessary pressure on the chest. The head pieces are made from a one-piece copper shell to which all fittings are riveted before they are brazed in. The Collars are also made in one piece and the strap which is brazed around the outer edge (to take the bolts for the dress) is also made of one piece, thus making it impossible for the bolts to split the strap from the shoulder form. Every article on the Helmets is thoroughly tested and nothing passed which is not perfect.

Improved Quarter-turn Screw Helmets, 3 Lights, each.....$100.00
Improved Quarter-turn Screw Helmets, 4 Lights, each..... 105.00
Improved Bolt Helmet, 3 Lights..... 125.00
Improved Bolt Helmet, 4 Lights..... 130.00

Improved Boat Helmet

Either style furnished with three or four windows and to receive air in head or neck as desired.

HELMET WITH TELEPHONE AND CABLE



Helmet, with Telephone and Cable

Particular attention is called to the cup into which the telephone cable leads and which contains both receiver and transmitter, neither of which projects into the Helmet. In the old style telephones the receiver and transmitter were fastened to the inside of the head piece and caused projections against which the head of the diver frequently struck. The telephone is also so arranged that it can be removed from the head piece without the disconnection of a single wire. This is often found necessary where work is to be done in narrow places, cribs, etc., where the carrying of the extra surface connecting line would be dangerous. The hole through which the telephone is removed can be closed with a cap furnished, and Helmet used in the regular way.

Bolt Helmet complete with telephone, batteries, cable etc., price $225.00

Screw Helmet complete with telephone, batteries, cable, etc. Price, $200.00

Diving Dress

Wading Dress

Canvas Dress

Canvas Chafing Pants

DIVING DRESS

Furnished in Nos. 1, 2, 3 and 4 sizes for men measuring in height respectively 5 ft. 6 in., 5 ft. 8 in., 6 ft., and over 6 ft. Fitted with pure gum cuffs and gasket. Gasket punched to receive Bolts on collar of Helmet if so ordered. Guaranteed both air and water tight. Price, each $50.00

Dresses can also be furnished in above sizes reinforced with an extra layer of canvas on the knees, elbows, shoulders, crotch and feet, at a slightly higher figure.

WADING DRESS

Furnished in the same sizes as Diving Dresses, but with rubber cuffs only. No gasket. Designed to be worn without Helmet in water over worker's head. A high cape extends upward and is held by fellow worker who directs operations. Price, each $45.00

CANVAS DRESS

Used to protect the entire Diving Dress from wear. Price, each $6.50

CANVAS CHAFING PANTS OR OVERALLS

Used to protect the lower portion of Diving Dress from wear, and fitted with straps to cross shoulder-piece of Helmet to hold same firmly on shoulder. Price, per pair $4.00

DIVING SHOES

Made from best grade leather, with cast iron or lead soles. Per pair..... $15.00

Made from best grade leather, with cast bronze soles and toe caps. Per pair..... $18.00

Cast iron Sandals with straps, New York Department Docks and Ferries style. Per pair.... $8.00

Canvas Chafing Shoes worn with sandals or other shoes to protect feet of dress from wear. Per pair..... $4.00

AIR HOSE

Best quality ½ inch 5 ply guaranteed not to kink. Furnished in lengths of 50 ft., capped ends fitted with couplings. Per length..... $20.00

BELT WEIGHTS WITH SHOULDER STRAPS

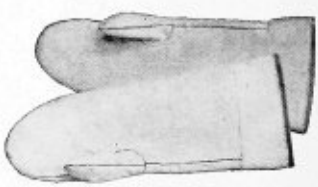
To be worn around waist. Weights attached with screws allowing removal if belt is considered too heavy. Per set..... $27.50

A cheaper set furnished with weights riveted to belt. Per set..... $22.00

HORSE SHOE WEIGHTS

Worn one each on chest and back of diver, suspended by ropes passed over Helmet collar. Per pair..... $15.00

Rings and Clamps



MITTENS WITH RINGS AND CLAMPS

Mittens furnished made from either heavy Diving Dress material or from black rubber. Former used for heavy work and latter in places where sense of touch is required, making use of heavy mittens impossible. Used in connection with Rings and Clamps. Ring to be inserted inside sleeve of dress and Mitten drawn up over outside of sleeve and Ring. Clamp then attached over all thus fastening Mitten securely.

Mittens, per pair, either style..... $5.00
Rings and Clamps, per pair..... 5.00

WRIST EXPANDERS

Used to stretch rubber cuffs on Diving Dress so as to allow entrance or withdrawal of hand. Per pair..... $5.00

KNIFE BELT WITH FAIRLEADER FOR HOSE

A heavy leather Belt with Steel knife screwed into a brass case. A ring on belt is designed to allow hose to pass through in carrying same under left arm before connecting to Helmet. Complete..... $10.00

ELECTRIC LIGHT

A 100 Candle Power Lamp enclosed in a water-tight glass case with vibratory spring and ring for lashing. Complete with 100 feet of best cable and plug for insertion in electric socket..... $60.00

(Give voltage of system when ordering.)

CRINOLINE

A cloth covered rattan frame with shoulder straps worn under the Diving Dress in very deep water. Designed to prevent pressure on the abdomen..... $8.50

HELMET CUSHION

To be worn over shoulders inside the dress to prevent chafing of Helmet collar and to ease weight..... $3.00

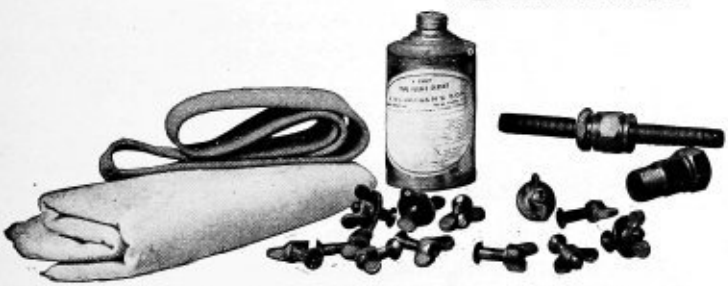
URINAL RUBBER

To be worn inside suit and furnished with straps for fastening to leg..... $3.50

BASKET

Designed to hold complete outfit, except Pump, with specially constructed place inside for hose, weights, shoes, etc. Convenient for shipping goods from place to place..... $18.00

REPAIR PARTS



Rubber Cloth for patching Dress or Mittens. Per yard. black $2.50
White 3.00

Cement for patching Dress or Mittens (instructions on can). Per pint..... .75

Bolts and Nuts for Helmet Collar to replace those worn, broken or lost. Each .25

Couplings for replacing those on hose in case of accident. Per set..... 2.00

Snap Tubing, used for making a water tight joint at the wrist. Usually cut into 2 inch strips. Per foot..... .60

Safety Valve used on Helmet where hose is connected. Made to automatically close and retain air in suit in case of break in hose or failure of air supply. Each..... 3.00

PEERLESS LUMBERMEN'S AND LOGGERS' TOOLS

PEAVIES

Patent Ribbed Socket Peavey

The lightest, strongest, most durable and evenly balanced. The pikes and sockets are set in oil paint, with 60,000 lbs. screw pressure.

No. 1. 2½ in.x5 ft. Rock Maple Handle. ..... per doz., $24.50

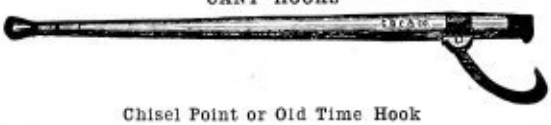
No. 2. 2¼ in.x5 ft.,Rock Maple Handle ..... per doz., 24.50

Peavey Hook, Expressly for Mill Use

No. 15. 2½ in. Steel Clasp, x 4½ft. Rock Maple Handles..... per doz., $21.25

No. 15½. 2¼ Mall Clasp x 4½ ft. Rock Maple Handles..... per doz., 19.50

CANT HOOKS

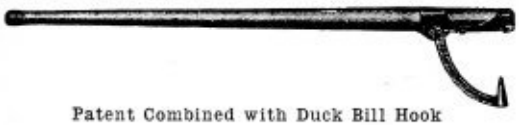


Chisel Point or Old Time Hook

For ordinary use in the woods or mill yard, the old time Cant Hook, with modern improvements, material, and workmanship is the best.

No. 9. 2½ in.x4½ ft., Rock Maple Handle, Chisel Point Hook..... per doz., $18.50

No. 10. 2½ in.x4½ ft., with Duck Bill Hook ..... per doz., 19.50



Patent Combined with Duck Bill Hook

The clasp and toe ring are connected so that it makes a guard that protects the stock from wearing, also holds the hook in the proper place and clasp from turning. It is the lightest and strongest Cant Hook ever manufactured.

No. 13. 2½ in.x4½ ft. Rock Maple Handle, Chisel Point Hook..... per doz., $18.50

No. 13½. Same, with Duck Bill Hook per doz., 19.50

HAND SPIKES

No, 18. 3 in. x 7 ft. Rock Maple Handle ..... per doz., $32.00

No. 19. 3 in. x 6 ft. Rock Maple Handle ..... per doz., 28.00

NAVAL PICKAROONS WITH HANDLES

For handling Pulp Wood, Cedar Posts, etc.

No. 20½. Naval Pickaroons with handles, steel point, axe eye, 3 foot handle ..... per doz., $12.50

TIMBER GRAPPLES OR LUG HOOKS

For handling railroad ties, telegraph poles, pulp wood, square timber, loading or unloading vessels, cars, or teams, building bridges and other kindred employment.

No, 21. With 4 ft. Handle..... per doz., $24.00

No. 21½. Extra heavy, 5 ft. Handle..... " 61.50

PIKE POLES

Best Ohio White Ash

Twisted point, three polished steel rings, pikes screwed in with oil paint.

No. 22.	With 12 ft. Handle	per doz.,	$20.00	No. 25. With 18 ft. Handle	per doz., $40.00
No. 23.	" 14 " "	"	24.50	No. 26. " 20 " "	" 54.00
No. 24.	" 16 " "	"	30.50		

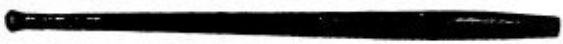
BEST OHIO WHITE ASH PICKAROONS

Twisted Point

Pikes and hooks are forged from one piece of steel. Point twisted, three seamless polished steel rings, pikes screwed in with oil paint.

No. 33.	With 2 ft. Handles	per doz.,	$16.00	No. 37. With 14 ft. Handles	per doz., $27.50
No. 34.	" 4 " "	"	17.50	No. 38. " 16 " "	" 33.50
No. 35.	" 6 " "	"	19.00	No. 39. " 18 " "	" 43.00
No. 35½.	" 8 " "	"	21.00	No. 39½. " 20 " "	" 57.00
No. 36.	" 12 " "	"	22.50		

WOOD WORK



Strictly Extra Selected Second Growth Maple

PEAVEY HANDLES

No. 59.	2½x4½ ft. bored for Peavey	per doz.,	$7.50
No. 60.	2½x5 " " " " "	"	7.75
No. 61.	2½x5½ " " " " "	"	8.25

CANT HOOK HANDLES

No. 63.	2½ in. x 4 ft.	per doz.,	$6.25
No. 64.	2½ " x4½ "	"	6.75
No. 65.	2½ " x5 "	"	7.50

HICKORY STOCKS

No. 71.	2½ in. x4½ ft.	per doz.,	$5.75	No. 73. 2½ in. x 5½ ft.	per doz., $7.50
No. 72.	2½ " x5 "	"	6.50		

LUG HOOK HANDLES

No. 70.	4 ft.	per doz.,	$5.00	No. 70½. 5. ft.	per doz., $6.25

White Ash Pike Pole Poles

No. 76.	12 ft.	per doz.,	$13.50	No. 79. 18 ft.	per doz., $30.00
No. 77.	14 "	"	16.50	No. 80. 20 "	" 45.00
No. 78.	16 "	"	21.00		

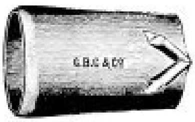
IRON WORK

CLASP AND BOLT

2½-inch with Bolts	per doz.,	$5.00
2¾ " " "	"	5.50
3 " " "	"	6.75

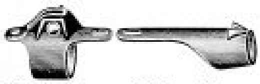
BROAD CLIP

Broad Clips, to bolt on Cant Hook. Drilled for bolt or rivet..............per doz., $2.75



TOE RING

2¼-inch	per doz.,	$2.00
2½ "	"	2.50

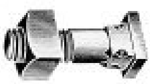


PATENT COMBINED CLASP AND TOE RING

2½ Clasp and Toe Ring	per doz.,	$9.00
2¾ " " " "	"	10.25
3 " " " "	"	12.00

PATENT PEAVEY SOCKET

2¼-inch with Bolts	per doz.,	$9.50
2½ " " "	"	9.75
2¾ " " "	"	10.50



STEEL PEAVEY OR CANT HOOK BOLTS

Per doz..........................$0.80

PEAVEY PICKS

Per doz.. $7.00

POLISHED SEAMLESS STEEL PIKE POLE RINGS

In sets..............................per doz., $4.00

PIKE POLE PICKS

Per doz......... $5.50

PICKAROON PICKS

Per doz.......... $8.75

NAVAL PICKAROONS FOR AXE HANDLES

Per doz.................. $7.00

LUG HOOK BAND AND SWIVEL

Per doz............................ $10.75

PEAVEY HOOK

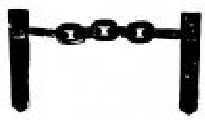
Per doz.............$9.50

DUCK BILL

Per doz......... $9.50

CHISEL POINT

Per doz......... $9.25

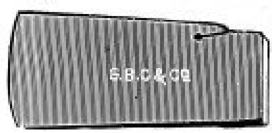


CHAIN DOG

⅜-inch chain, 6 inch dog, 5 links chain....per 100 $25.00

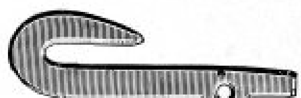
RING DOG

Ring Dogs, 3 inch ring, 6 inch dog, per 100........................ $22.00



STEEL SAW WEDGES

Assorted 1½ to 3 lbs......per lb., $0.12½



CORNER-BIND HOOK

Per doz........ $5.25

NORWAY IRON SWIVEL HOOK AND RING

1 inch with ⅝ Ring.....per doz., $10.50

IRON WORK

SKIDDING TONGS WITH SWIVEL HOOKS

Octagon

1 inch Octagon Steel	each,	$6.25
1⅛ " " "	"	6.75
1¼ " " "	"	8.25
1½x⅝ inch Flat "	"	7.00

Flat

SKIDDING TONGS WITH RINGS

1 inch Octagon Steel	each,	$5.50
1⅛ " " "	"	6.00
1¼ " " "	"	7.25
1½x⅝ inch Flat "	"	6.00

GOODYEAR LOAD BINDER

For binding logs, hay, lumber, pipe or large loads of any description it has no equal. Weight 21 pounds per pair. Per pair.....$6.00

Flat Swamp Hook

SWAMP HOOK

1¼x⅝ inches	per doz.,	$22.50
1½x⅝ "	"	25.00
1¾x¾ "	"	28.50

LOADING HOOK

1 x½ "	per doz.,	$21.00
¾ inch. Octagon	"	25.75

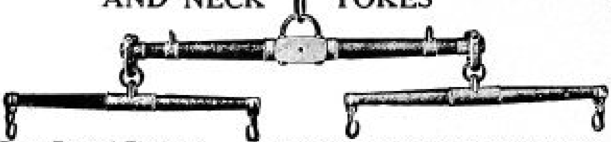
Loading Hook

JOIST OR TIMBER TONGS

For Hoisting Timber, Scantlings, Planks, Etc.

1 inch. Octagon Steel	each,	$3.50
1⅛ " " "	"	4.00
1¼ " " "	"	4.50

THE EVERLASTING TUBULAR STEEL EVENERS, SINGLE TREES AND NECK YOKES



Drop Forged Fittings. **New No. 93 Evener and Singletrees.**
No. 2 is for lumber gears. No. 3 is for logging trucks.

No.	Capacity tons	Length, inches		Price, each	
		Evener	Whiffletrees	With Swivel Grab Hook	Without Staple or Swivel Grab Hook
2	4	50	36	$8.50	$7.50
3	8	52	36	9.50	8.00

New No. 94 Neck Yokes

No. 3. Regular for Lumber Wagons, 48 inch length, $\frac{3}{4}$x4 inch Centre Ring, $\frac{7}{16}$x4 inch End Rings, each.................................$3.25

No. 4. Extra Heavy for Log Trucks, 52 inch length, $\frac{3}{4}$x4 inch Centre Ring, $\frac{1}{2}$x4 inch End Rings, each.................................3.50

New No. 95 Whiffletrees.

No. 3. Regular for Wagon, 36 inch length each, $1.75
No. 4. Extra Heavy, 36 inch length...... " 2.00
In ordering state New Pattern and give Number.

Neck Yokes

No. 95. Mixed second growth hickory, $2\frac{1}{2}$ in. center, 38 ins. long.......per doz., $6.00
No. 96. Mixed second growth hickory, $2\frac{5}{8}$ in. center, 40 ins. long.......per doz., 6.25
No. 90. Mixed second growth hickory, 3 in. center, 48 ins. long.......per doz., 11.80

Singletrees

Oval

No. 101. Mixed second growth hickory, $2\frac{1}{2}$ in. center, 36 ins. long......per doz., $4.40
No. 102. Mixed second growth hickory, $2\frac{3}{4}$ in. center, 38 ins. long......per doz., 5.40
No. 103. Mixed second growth hickory, 3 in. center, 40 ins. long......per doz., 6.50

Eveners.

No. 104. Select hickory, 2x4 inches, 4 feet long......................per doz., $7.00
No. 106. Select hickory, $2\frac{1}{2}$x$4\frac{1}{2}$ inches, 4 ft. 6 inches long............per doz., 12.50
No. 107. Select hickory, 2x6 inches, 6 ft. long......................per doz., 23.00

IRON-WORK

Single and Doubletree Irons. Welded Center Clip and Ring

No. of Clip	Size of Round Part of Clip, ins.	Size of Iron in Ring inches	Per 100
34	$\frac{3}{4}$	$\frac{5}{8}$	$21.00
35	$\frac{5}{8}$	$\frac{9}{16}$	13.80
36	$\frac{5}{8}$	$\frac{1}{2}$	13.00
37	$\frac{9}{16}$	$\frac{1}{2}$	11.50
38	$\frac{9}{16}$	$\frac{7}{16}$	11.00
39	$\frac{1}{2}$	$\frac{7}{16}$	9.20

NECK-YOKE CENTER IRONS

With Plates Complete

Center Irons, $\frac{7}{16}$ inch eye, $\frac{3}{8}$ inch links and $\frac{9}{16}$x3 inch Rings........per 100 $25.00
Center Irons, $\frac{1}{2}$ inch eye, $\frac{7}{16}$ inch links and $\frac{5}{8}$x$3\frac{1}{2}$ inch Ring.......per 100 31.00

MALLEABLE FERRULES AND WROUGHT HOOKS

Per Hundred

$1\frac{3}{4}$ inch ferrule inside small end, $\frac{7}{16}$ inch Hook $13.20
$1\frac{5}{8}$ " " " " " $\frac{7}{16}$ " " 12.20
$1\frac{1}{2}$ " " " " " $\frac{7}{16}$ " " 10.70
$1\frac{3}{8}$ " " " " " $\frac{3}{8}$ " " 9.10
$1\frac{1}{4}$ " " " " " $\frac{3}{8}$ " " 7.60

FERRULE AND HOOK

Heavy Pattern to Pull Direct from Ferrule

Ferrule, inches..	$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{8}$
Hook, inches....	$\frac{7}{16}$	$\frac{7}{16}$	$\frac{3}{8}$
Per 100..........	$15.40	$12.50	$9.50

Ferrule measurement given is inside small end.

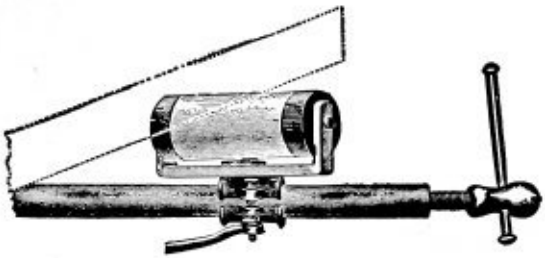
NECK-YOKE IRONS

Malleable Ferrules and Wrought Iron Rings

Ferrule $1\frac{1}{4}$ inches inside small end, with Ring 3x$\frac{3}{8}$ inch...per 100 $7.10
Ferrule $1\frac{3}{8}$ inches inside small end, with Ring 2x$\frac{3}{8}$ inch... per 100 7.70
Ferrule $1\frac{1}{2}$ inches inside small end, with Ring $3\frac{1}{4}$x$\frac{7}{16}$ inch. per 100 9.60
Ferrule $1\frac{3}{4}$ inches inside small end, with Ring $3\frac{1}{4}$x$\frac{7}{16}$ inch. per 100 12.30

LUMBER ROLLERS

IRON SIDE ROLLER



The best and cheapest device on the market for quickly and cheaply loading and unloading lumber cars. We have in two lengths, Regular and Extra length; both are made of two inch pipe. Length of Roller, 15 inches.

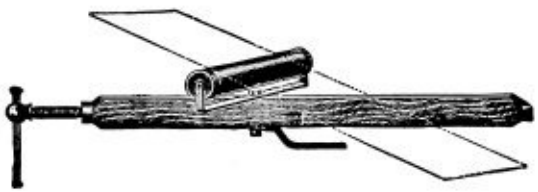
Regular Length

Length of iron pipe 4 feet. Length of screw, 16 inches. Entire length, 5 feet 4 feet.....each, $7.50

Extra Length

Length of iron pipe, 4 feet 6 inches. Length of screw, 16 inches. Entire length, 5 feet 10 inches, each, $9.00

WOOD SIDE ROLLER



We have in two lengths, same as the iron.

Regular Length

Length of wood, 3 feet 11 inches. Length of screw, 16 inches. Entire length, 5 feet 3 inches.....each, $7.50

Extra Length

Length of wood, 4 feet 6 inches. Length of screw, 16 inches. Entire length, 5 feet 10 inches.....each, $9.00
Side Rollers for Dry Kiln Doors have 3 rollers on frame; entire length, 6 feet 10½ inches.....each, 14.50

END ROLLERS

End Roller has 4 inch diameter roller; length of roller, 14 inches.....each, $4.50

COMBINED HORSESHOE DOLLY AND TIMBER ROLLER

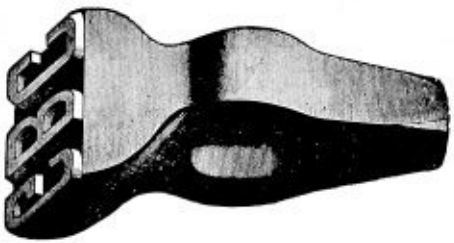
Horseshoe Dolly has 4 inch diameter roller; length of roller, 14 inches; horseshoe is ½x1½ inches, iron; length of horseshoe, 12 inches.....each, $4.50

TIMBER TRUCK

Regular has 6 inch iron roller, 17x20 inch frame made of 2½ inch timber.....each, $6.50
Extra heavy has 7 inch iron roller, 20x24 inch frame made of 3 inch timber.....each, 9.00
Regular with concave roller, for pipe.....each, 8.50

STEEL LOG STAMPS

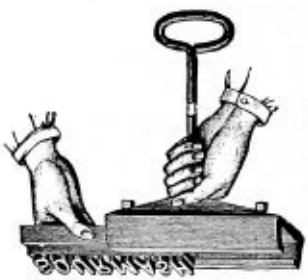
For Marking Ends of Logs, Timber, etc. Made of the Best Steel and Warranted



1 inch letter.....per letter, $1.00
Forgings for two 1 inch letters, estimated weight, 2½ lbs.
1¼ inch letter.....per letter, 1.25
Forgings for two 1¼ inch letters, estimated weight, 3¼ lbs.
1½ inch letter.....per letter, 1.50
Forgings for two 1½ inch letters, estimated weight, 4 lbs.
Add 50c per lb. for forgings.
Borders, $1.00 extra. Stars same price as Letters.

PATENT IMPROVED BURNING BRANDS

BRANDS, WITH NAME COMPLETE



	¼ inch	⅜ inch	½ inch	¾ inch	1 inch	1¼ inch	1½ inch
Brands of 1 letter	$0.70	$0.70	$0.70	$1.00	$1.25	$1.25	$1.50
" 2 "	.85	.85	.85	1.40	1.65	1.75	2.00
" 3 "	1.00	1.00	1.00	1.70	1.85	2.00	2.50
" 4 "	1.00	1.00	1.00	2.00	2.30	2.50	3.25
" 5 "	1.15	1.20	1.25	2.50	3.00	3.25	4.00
" 6 "	1.30	1.40	1.50	2.75	3.20	3.50	4.75
" 7 "	1.45	1.60	1.75	3.25	3.90	4.25	5.50
" 8 "	1.60	1.80	2.00	4.00	4.10	4.50	6.25
" 9 "	1.75	2.00	2.25	4.50	4.80	5.25	7.00
" 10 "	1.90	2.20	2.50	4.75	5.00	5.50	7.75
" 11 "	2.05	2.40	2.75	5.00	5.70	6.25	8.25
" 12 "	2.20	2.60	3.00	5.25	5.90	6.50	9.00
" 13 "	2.35	2.80	3.25	5.50	6.60	7.25	....
" 14 "	2.50	3.00	3.50	5.75	6.80	7.50	....
" 15 "	2.65	3.20	3.75	....	....	....	....

SINGLE LETTERS OR FIGURES

¼ inch.....each, 8c
⅜ " ..... " 9c
½ " ..... " 10c
¾ inch.....each, 20c
1 " ..... " 25c
1¼ " ..... " 30c
1½ inch.....each, 40c.
Periods Half Price.

Should any letters become damaged or burned out they can be replaced at any time at small expense, and the Brand always kept in good order.

STEEL STAMPS, LETTERS AND FIGURES

HAND MADE

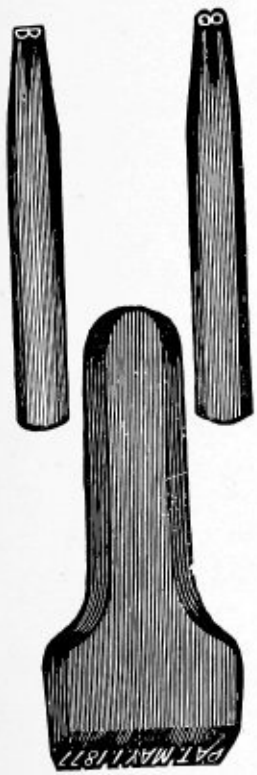
For stamping tools, wood, iron, steel and metals of all kinds. Made of the best English steel and warranted.

Initial Stamps 25 per cent additional.

Fity cents per pound extra for forging on ¼ inch and larger.

All sizes of Hammer Stamps, 50 cents per pound extra for forging.

Always mention for what purpose the stamps are to be used.



Size	Figures per Set	Alphabet per Set	Steel Stamps per Letter
1/32	$2.50	$7.50	$0.30
1/24	2.00	6.00	.25
1/20	1.75	5.25	.20
1/16	1.50	4.50	.15
1/12	1.50	4.50	.15
3/32	1.50	4.50	.15
1/10	1.50	4.50	.15
1/8	1.50	4.50	.15
5/32	1.75	5.25	.18
3/16	2.00	6.00	.20
7/32	2.25	6.75	.25
1/4	2.50	7.50	.30
5/16	3.00	9.00	.35
3/8	3.50	10.50	.45
7/16	4.50	13.50	.55
1/2	5.00	15.00	.60
5/8	6.00	18.00	.75
3/4	7.50	22.50	.85
1	9.00	27.00	1.00

LEATHER APRONS FOR LUMBER HANDLERS

Made from extra heavy russet stuffed split leather, with one inch wide hip straps and roller buckles. All straps fastened with patent rivets, smooth heads on both sides. Best wearing aprons on the market.

No. 561. Size 26x21 in....per doz. $24.00

No. 562. " 26x24 " with 3 in. bib.....per doz. 25.50

No. 461. Size 26x27 in., with 6 in. bib and 33 in. neckstrap with buckle.....per doz. 30.00

No. 462. Size 24x26 in., with 6 in. bib and 33 in. neckstrap with buckle.....per doz. 27.00

LUMBERMEN'S PENCIL HOLDER

Nickel Plated

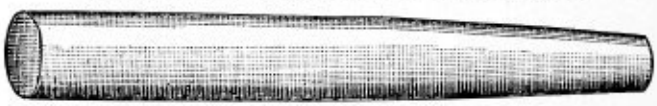
Complete with 36 inch Handle	per doz.	$12.00
Holder only	" "	10.00

LUMBERMEN'S PENCILS

No. 361.	Black, regular	per doz.	$0.75
No. 365.	" soft, for wet lumber	"	.75
No. 520.	Red	"	1.00
No. 521.	Blue	"	1.00
No. 522.	Green	"	1.00
Seven inch, F. L. T., Shipper's Pencil, blue, green, red		"	1.00

Metal Worker's Crayons	per gross,	$5.00

RAILROAD CRAYONS OR CHALK



4 inches long, 1 inch diameter, in cases one gross

White	per gross,	$1.00
Blue	"	1.50
Red	"	1.25
Green	"	1.50

PENCILS

Dixon's Office Pencils

No. 3.	Hexagon Lead Pencils, with rubber tip, hard	per gross,	$4.50
No. 2.	" " " " " " medium	"	4.50
Round Cedar Pencils, with rubber tip		"	1.25
" " "	plain	"	80

7 inch Oval Carpenter's Pencils	per gross,	$2.75
9 " " " "	"	2.75

CARPENTERS' CHALK

Packed Half Gross in Box

White	per gross,	$0.90
Red	"	1.10
Blue	"	1.20

SCHOOL CRAYON

White	per gross,	$0.25

PARDEE, COOK & CO.
EXTRA
6 INCH
CLEAR
POKEGAMA, CAL

STENCILS

Owing to the great variety of Stencils in design, lettering, etc., we are unable to quote any prices.

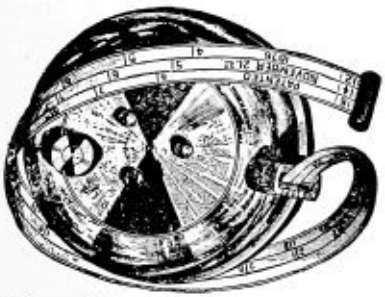
STENCIL BRUSHES

No. 1.	Diameter 9/16	inch,	per doz.,	$2.00
No. 2.	" 11/16	"	"	2.50
No. 3.	" 3/4	"	"	2.75
No. 4.	" 7/8	"	"	3.25
No. 6.	" 1 1/4	"	"	3.90
No. 7.	" 1 1/4	"	"	4.50
No. 8.	" 1 3/8	"	"	5.60
No. 10.	" 1 1/2	"	"	7.50
No. 12.	" 1 7/8	"	"	10.00
No. 14.	" 2	"	"	12.50

TIN MARKING POTS

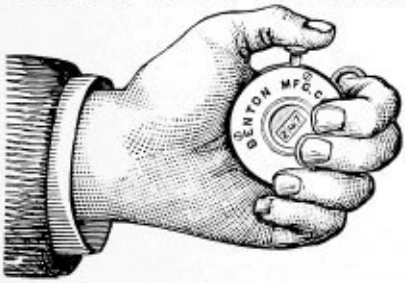
Medium, 1 1/2 pts., ea., $0.35; per doz., $4.00
Large, 2 1/2 pts... " .40; " 4.50

WADLEIGH PATENT TAPE LINE



Tape and Brass Case.....each, $2.25
Tape only ..... " 1.25

BENTON TALLY REGISTER



No. 0. Records to 1,000.....each, $2.50
No. 1. " " 10,000..... " 3.50

BEADED BOOT CALKS

Packed 100 in Box; 1,000 in Package
No. 0000 to No. 2, per 1,000.....$6.00
No. 3 and 4..... 6.50

DRY STENCIL INK

BLACK

No. 0.	5 1/2 in. dia., with can, each		$0.50
	Per doz		5.00
No. 1.	4 1/4 in. dia., with can, each		.35
	Per doz		3.50
No. 4.	3 in. dia., with can, each		.20
	Per doz		2.00
No. 5.	2 in. dia., with can, each		.15
	Per doz		1.50
No. 6.	1 3/4 in. dia., with can, each		.10
	Per doz		1.00
No. 1.	4 1/4 in dia., double thick, no can, each		.40
	Per doz		4.00

BLUE AND WHITE

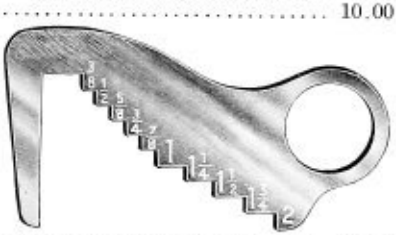
No. 0.	5 1/2	in. dia., with can, each,	$0.75; per doz.,	$7.50
No. 1.	4 1/4	" " "	.50; "	5.00
No. 4.	3	" " "	.30; "	3.00
No. 5.	2	" " "	.20; "	2.00
No. 6.	1 3/4	" " "	.12; "	1.20
No. 1.	4 1/4	" double thick, no can, each		.60
	Per doz			6.00

RED, GREEN AND YELLOW

No. 0.	5 1/2	in. dia, with can, each,	$1.25; per doz.,	$12.00
No. 1.	4 1/4	" " "	.75; "	7.50
No. 4.	3	" " "	.40; "	4.00
No. 5.	2	" " "	.25; "	2.50
No. 6.	1 3/4	" " "	.15; "	1.50
No. 1.	4 1/4	" double thick, no can, each		1.00
	Per doz			10.00

LUMBER GAUGES

Nickel Plated



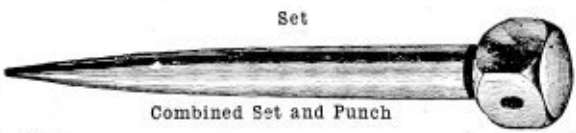
No. 0. Measures 1, 1 1/4, 1 1/2, 1 3/4, 2 inch..each, $0.50
No. 00. " 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1 1/4, 1 1/2, 1 3/4, 2..... " .50
No. 000. " 5/8, 3/4, 1, 1 1/4, 2, 2 1/2... " .50

EMPIRE AUTOMATIC COUNTER

Register from 1 to 9,999, each, $1.50

CALK SETS

Set



Combined Set and Punch

Sets.....per doz., $2.00
Combined Set and Punch..... " 2.50

BOARD AND LOG RULES

No. 1 Board Rule

No. 1. Three tier, 3½ foot inspector's Board Rule.....per doz., $27.00

This Rule is made of the very best second growth white hickory. The head is brazed (steel caps and brass-shoulders).

No. 2. Three tier, 3 foot Board Rule per doz., $25.00

This Rule is the same as No. 1, except in length It is the rule for regular yard work.

No. 2½. Three tier, 2½ foot Board Rule per doz.,..... $24.00

Same quality as the No. 2, difference being in length only.

No. 3. Three tier, 3 foot Board Rule, brazed head.....per doz., $23.00

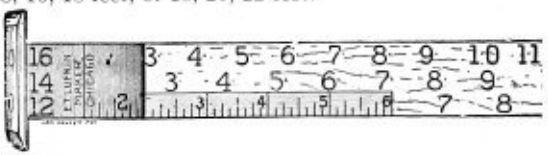
This Rule is the same as No. 2, except the brass head is half an inch shorter.

No. 4. Three tier, 3 foot Board Rule, patent socket, steel head.....per doz., $21.00

No. 5. Three tier, 3 foot Board Rule, with brass plate, patent socket, steel head.....per doz., $25.00

This Rule is the same as the No. 4, except that it has a brass inch plate.

State whether you want opposite side to measure 8, 10, 18 feet, or 18, 20, 22 feet.

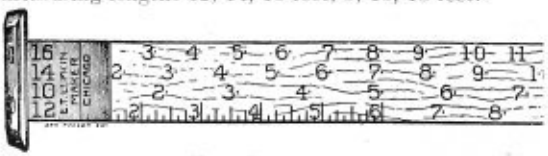


No. 6 Board Rule

No. 6. Three tier, 3 foot Board Rule, extra heavy brazed head, with brass plate.....per doz., $27.00

No. 6N. Same as No. 6, except in width (1 inch wide).....per doz., 27.00

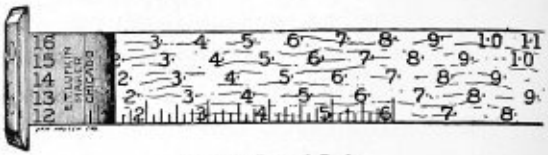
These Rules are generally used for hardwood, measuring lengths 12, 14, 16 feet, 8, 10, 18 feet.



No. 8 Board Rule

No. 8. Four tier, 3 foot Board Rule, brazed head.....per doz., $25.00

Corresponds in material and workmanship to our No. 2 rule.



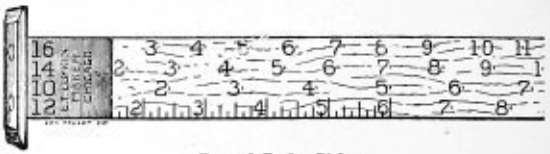
No. 10 Board Rule

No. 10. Five tier, 3 foot Board Rule, brazed head.....per doz., $30.00

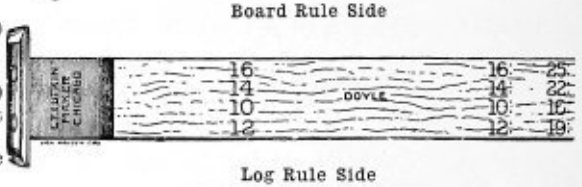
Opposite side measure 7, 8, 9, 10, 11 feet.

No. 12. Four tier, 3 foot Board Rule, brazed head, with brass plate.....per doz., $28.00

State whether you want opposite side to measure 12, 14, 16, 18 feet, or 8, 10, 20, 22 feet.



Board Rule Side



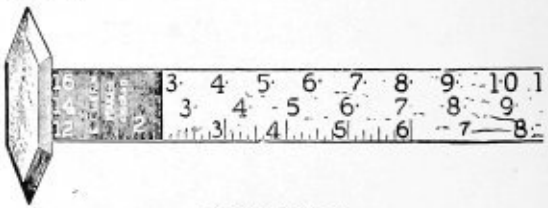
Log Rule Side

No. 13 Combination Rule

No. 13. Four tier, 3 foot Board and Log Rule combined, brazed head.....per doz., $28.00

No. 13½. Four tier, 3½ foot Board and Log Rule combined, brazed head .....per doz., $30.00

Regular stock has Doyle scale. Any scale made to order.



Diamond Head

This patent Diamond Head is especially recommended on account of the head being able to withstand more strain than regular head. We carry in stock the Diamond Head in Nos. 2 and 6, 3 foot, in lengths of 8, 10, 18 one side, 12, 14, 16, reverse side.

Made to order in any rule.

Extra price add to list.....per doz., $2.00

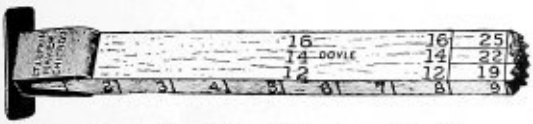
STEEL BOARD RULES

No.							
51	3½	foot,	3	tier,	Inspector's Rule,	per doz.	$42.00
52	3	"	3	"	Board Rule.....	" "	36.00
52½	2½	"	3	"	Sorting "	" "	33.00
58	3	"	4	"	Board "	" "	39.00
58½	2½	"	4	"	Sorting "	" "	36.00
59	3	"	5	"	Board "	" "	42.00

LOG RULES

We carry in stock, Doyle, Scribner and Decimal scales.

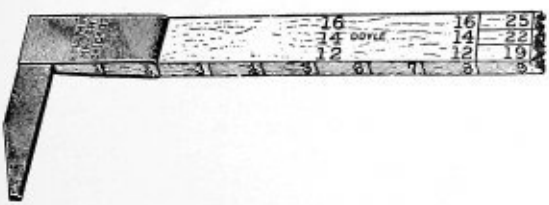
Any other scale to order. Regular Rules are marked to scale from 8 to 20 feet, or 12 to 24 feet logs, every two feet. In ordering, specify Scale.



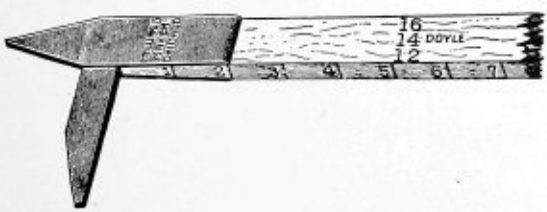
No. 14. Square Head Log Rule figured to 48 inches, with 8 inch handle, any scale desired.....per doz., $27.00

No. 15. Square Head Log Rule, figured to 36 inches, with 6 inch handle, any scale desired.....per doz., 23.00

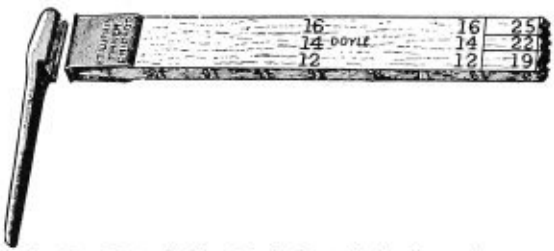
No. 16. Solid Hook Log Rule, figured to 48 inches, with 8 inch handle, any scale.....per doz., $27.00



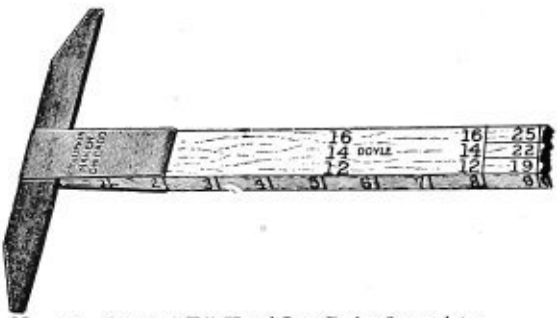
No. 16½. "L" Steel Hook Log Rule, figured to 48 inches, with 8 inch handle, any scale.....per doz., $28.00



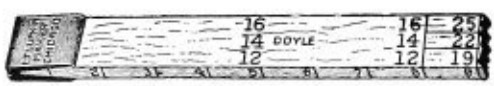
No. 21. Pick and Hook Log Rule, figured to 48 inches, with 8 inch handle, any scale.....per doz., $29.00



No. 17. Detachable Hook Log Rule, figured to 48 inches, with 8 inch handle, any scale.....per doz., $28.00



No. 18. Steel, "T" Head Log Rule, figured to 48 inches, with 8 inch handle, any scale.....per doz., $29.00



No. 19. Plain Head Log Rule, figured to 48 inches, with 8 inch handle, any scale.....per doz., $25.00

No. 22. Solid "T" Head Log Rule, figured to 48 inches, with 8 inch handle, any scale.....per doz., $27.00

This head is used extensively in Wisconsin. In ordering, specify Scale.

No. 23. 1 inch square, 2 tiers of figures each side, no head.....per doz., 24.00

No. 24. 1 inch square, 2 tiers of figures each side, with square head....per doz., 30.00

Figured 48 inches, full length.

In ordering, specify scale.

ELECTRIC CONSTRUCTION TOOLS

TAMPING BAR

8 foot handle, iron shoe.....per dozen $18.00

LOY OR SLICK

8 foot handle .....per dozen $37.50

SPOONS FOR DIGGING OUT HOLES

8 foot handle.....per dozen $17.50

PIKE POLES WITH GUARDS

12 feet	per	dozen	$22.00
14 "	"	"	24.25
16 "	"	"	28.00
18 "	"	"	31.75

JENNEY POLE SUPPORT

Can fold up when shipping.

6 feet high. ... per doz. $75.00
7½ " " ..... " 84.00

POLE CLIMBERS

Eastern Pattern

Made from one piece of steel. No rivets or screws to get loose.

Without straps.....per pair $2.25

MULE POLE SUPPORT

4½ feet high.....per doz. $51.60
6 " " ..... " " 60.00
7½ " " ..... " " 27.60

TAKE UP REEL

To make 18 in. Coils.....each $15.00

BARROW REEL

Each..... $11.00

For Pike Poles, Peavies, Cant Hooks and Lug Hooks, see pages 232.
For Steel Tamping and Digging Bars, see page 513.
For Shovels, Long Hangle, see page 541.

COTTON DUCK

ALL STANDARD BRANDS

Our stock of Cotton Duck is without exception the largest and most varied in the country. We are agents for several of the standard brands, and can supply all widths and weights.

STANDARD WIDE DUCK

In rolls of about 100 yards each

LIST PRICE PER YARD

List Adopted December 10, 1906.

Nos.	1-0	1	2	3	4	5	6	7	8	9	10	11	12	Nos.
26 in.	$0.52	$0.50	$0.47	$0.44	$0.41	$0.39	$0.36	$0.35	$0.33	$0.31	$0.29	$0.26	$0.24	26 in
28 "	.56	.53	.51	.48	.45	.42	.39	.38	.35	.33	.31	.28	.26	28 "
30 "	.60	.57	.54	.51	.48	.45	.41	.40	.38	.36	.33	.30	.28	30 "
32 "	.64	.61	.58	.54	.51	.48	.44	.43	.40	.39	.36	.32	.30	32 "
34 "	.68	.65	.61	.58	.54	.51	.47	.46	.43	.41	.38	.34	.32	34 "
36 "	.72	.69	.65	.61	.57	.53	.50	.48	.45	.43	.40	.36	.33	36 "
38 "	.76	.72	.68	.64	.60	.56	.52	.51	.48	.46	.42	.38	.35	38 "
40 "	.80	.76	.72	.68	.64	.59	.55	.54	.50	.48	.44	.40	.37	40 "
42 "	.84	.80	.76	.71	.67	.62	.58	.56	.53	.51	.47	.42	.39	42 "
44 "	.88	.84	.79	.74	.70	.65	.61	.59	.55	.53	.49	.44	.41	44 "
46 "	.92	.88	.83	.78	.73	.68	.63	.62	.58	.55	.51	.46	.43	46 "
48 "	.96	.91	.86	.81	.76	.71	.66	.64	.60	.58	.53	.48	.44	48 "
50 "	1.00	.95	.90	.85	.79	.74	.69	.67	.63	.60	.55	.50	.46	50 "
52 "	1.04	.99	.93	.88	.82	.77	.72	.70	.65	.63	.58	.52	.48	52 "
54 "	1.08	1.03	.97	.91	.86	.80	.74	.72	.68	.65	.60	.54	.50	54 "
56 "	1.12	1.06	1.01	.95	.89	.83	.77	.75	.70	.67	.62	.56	.52	56 "
58 "	1.16	1.10	1.04	.98	.92	.86	.80	.78	.73	.70	.64	.58	.54	58 "
60 "	1.24	1.17	1.11	1.04	.98	.91	.85	.82	.77	.74	.68	.62	.56	60 "
62 "	1.28	1.21	1.14	1.08	1.01	.94	.87	.85	.80	.76	.70	.64	.58	62 "
64 "	1.32	1.25	1.18	1.11	1.04	.97	.90	.88	.82	.79	.72	.66	.60	64 "
66 "	1.36	1.29	1.22	1.14	1.07	1.00	.93	.90	.85	.81	.75	.68	.62	66 "
68 "	1.40	1.33	1.25	1.18	1.11	1.03	.96	.93	.88	.84	.77	.70	.64	68 "
70 "	1.44	1.37	1.29	1.21	1.14	1.06	.99	.96	.90	.86	.79	.72	.66	70 "
72 "	1.52	1.44	1.36	1.28	1.20	1.12	1.04	1.01	.95	.90	.83	.76	.69	72 "
74 "	1.56	1.48	1.40	1.32	1.23	1.15	1.07	1.04	.98	.93	.86	.78	.71	74 "
76 "	1.60	1.52	1.44	1.35	1.27	1.18	1.10	1.07	1.00	.95	.88	.80	.73	76 "
78 "	1.65	1.56	1.47	1.39	1.30	1.22	1.13	1.10	1.03	.98	.90	.82	.75	78 "
80 "	1.69	1.60	1.51	1.42	1.33	1.25	1.16	1.12	1.05	1.00	.93	.84	.77	80 "
82 "	1.73	1.64	1.55	1.46	1.37	1.28	1.19	1.15	1.08	1.03	.95	.86	.79	82 "
84 "	1.86	1.77	1.67	1.57	1.47	1.37	1.28	1.24	1.16	1.10	1.01	.92	.84	84 "
86 "	2.00	1.90	1.79	1.69	1.58	1.48	1.37	1.32	1.23	1.18	1.08	.98	.89	86 "
88 "	2.05	1.94	1.83	1.72	1.62	1.51	1.40	1.35	1.27	1.20	1.11	1.00	.92	88 "
90 "	2.09	1.98	1.87	1.76	1.65	1.54	1.43	1.39	1.30	1.23	1.13	1.03	.94	90 "
92 "	2.14	2.03	1.92	1.80	1.69	1.58	1.47	1.42	1.33	1.26	1.16	1.05	.96	92 "
94 "	2.34	2.22	2.09	1.97	1.85	1.72	1.60	1.54	1.44	1.37	1.25	1.14	1.03	94 "
96 "	2.38	2.26	2.14	2.01	1.89	1.76	1.64	1.58	1.47	1.40	1.28	1.16	1.05	96 "
98 "	2.49	2.36	2.23	2.10	1.97	1.84	1.71	1.64	1.54	1.45	1.33	1.21	1.10	98 "
100 "	2.54	2.41	2.27	2.14	2.01	1.87	1.74	1.68	1.57	1.48	1.36	1.23	1.12	100 "
102 "	2.59	2.46	2.32	2.18	2.05	1.91	1.78	1.71	1.60	1.51	1.39	1.26	1.14	102 "
104 "	2.64	2.50	2.37	2.23	2.09	1.95	1.81	1.74	1.63	1.54	1.41	1.28	1.16	104 "
106 "	2.69	2.55	2.41	2.27	2.13	1.99	1.84	1.78	1.66	1.57	1.44	1.31	1.19	106 "
108 "	2.74	2.60	2.46	2.31	2.17	2.02	1.88	1.81	1.69	1.60	1.47	1.33	1.21	108 "
110 "	2.80	2.65	2.50	2.35	2.21	2.06	1.91	1.84	1.72	1.63	1.50	1.35	1.23	110 "
112 "	2.85	2.70	2.55	2.40	2.25	2.10	1.95	1.88	1.76	1.66	1.52	1.38	1.25	112 "
114 "	2.90	2.75	2.59	2.44	2.29	2.14	1.98	1.91	1.79	1.69	1.55	1.40	1.28	114 "
120 "	3.05	2.89	2.73	2.57	2.41	2.25	2.09	2.01	1.88	1.78	1.63	1.48	1.34	120 "
128 "	3.39	3.21	3.03	2.86	2.68	2.50	2.32	2.23	2.09	1.97	1.82	1.63	1.48	128 "
132 "	3.71	3.51	3.32	3.12	2.93	2.73	2.54	2.43	2.27	2.14	1.96	1.77	1.61	132 "
136 "	4.78	4.53	4.27	4.02	3.77	3.52	3.27	3.16	2.94	2.75	2.51	2.29	2.09	136 "
144 "	5.13	4.86	4.59	4.32	4.05	3.79	3.51	3.39	3.15	2.95	2.69	2.46	2.24	144 "

Nos. 4, 6, 8 and 10 in. widths, 26 to 120 inches, usually in stock

Enameling Duck, 38, 46, 51, 57, 60 and 72 inches.

COTTON DUCK

SAIL DUCK

STANDARD BRANDS

HARD, SOFT AND MEDIUM

List Price Per Yard — December 10, 1906

Number.....	00	0	1	2	3	4	5	6	7	8	9	10	11	12
22 in. per yd.	$0.45	$0.43	$0.40	$0.38	$0.36	$0.35	$0.33	$0.32	$0.31	$0.29	$0.28	$0.26	$0.25	$0.24
24 " " "	.49	.47	.44	.42	.39	.38	.36	.35	.33	.32	.30	.28	.27	.26

NAUGHT DUCK

No.	14 in.	16 in.	18 in.	20 in.	22 in.	24 in.
3-0	$0.33	$0.36	$0.39	$0.43	$0.47	$0.51
4-0	.35	.38	.41	.45	.49	.53
5-0	.37	.40	.43	.47	.51	.55
6-0	.39	.42	.45	.49	.53	.57
8-0	.43	.46	.49	.53	.57	.61
10-0	.47	.50	.54	.58	.62	.66
12-0	.52	.55	.59	.63	.67	.72

YACHT DUCK

Number	14 in.	16 in.	18 in.
00	$0.31	$0.36	$0.40
0	.30	.34	.38
1	.29	.33	.37
2	.28	.32	.36
3	.27	.31	.35
4	.26	.30	.34
5	.25	.29	.33
6	.24	.28	.32
7	.23	.27	.30
8	.22	.25	.28
9	.21	.24	.27
10	.20	.23	.26
11	.19	.22	.25
12	.18	.21	.24

SPECIAL YACHT DUCK

Number	14 in.	16 in.
0	$0.46	$0.52
1	.43	.49
2	.40	.46
3	.37	.44
4	.35	.41
5	.34	.39
6	.32	.36
7	.30	.34
8	.28	.32
9	.26	.30
10	.24	.26

NARROW DUCK
Over 12 inches

Number	14 in.	16 in.	18 in.	20 in.
00	$0.28	$0.31	$0.35	$0.38
0	.27	.30	.34	.37
1	.26	.29	.33	.35
2	.25	.28	.31	.33
3	.24	.26	.29	.31
4	.23	.25	.28	.30
5	.22	.24	.27	.29
6	.21	.23	.26	.28
7	.20	.22	.25	.27
8	.18	.20	.24	.26
9	.17	.19	.23	.25
10	.16	.18	.21	.23
11	.15	.17	.20	.22
12	.14	.16	.19	.21

NARROW DUCK
Under 14 inches

Number	1-0	1	2	3	4	5	6	8	10	12
4 in.	11	10	9½	9	8	7½	7	6½	5½	5
5 "	13½	12	11½	11	10	9½	9	8	7	5½
6 "	15½	15	14	13½	12	11½	11	9½	8	7
7 "	18	17	16	15½	15	13½	13	12	10	8
8 "	20	19½	18	17½	16	15½	14	13	11	9
9 "	23	21½	20	19½	18	17	16	14	12	10
10 "	24	23	21½	20	19	17½	17	15	13½	11
11 "	27	25½	24	23	21½	20	19	16	14	12
12 "	28	27	25½	24	23	22	20	18	16	14

HEAVY NARROW DUCK
Under 14 inches

Nos.	2-0	3-0	4-0	6-0	8-0	10-0	12-0
4 in.	$0.13	$0.14	$0.14½	$0.15½	$0.17	$0.18	$0.19
5 "	.16	.17	.18	.19	.21	.22	.23
6 "	.18	.19	.20	.22	.24	.25	.26
7 "	.21	.22	.23	.25	.27	.28	.29
8 "	.23	.24	.25	.27	.29	.32	.34
9 "	.26	.27	.28	.31	.33	.36	.39
10 "	.27	.28	.30	.32	.35	.38	.40
11 "	.30	.31	.33	.35	.37	.40	.44
12 "	.32	.33	.35	.38	.40	.43	.47

COTTONDUCK

OUNCE DUCK

ARMY DUCK

28½ Inch

Bales about 600 yards.
Pieces about 50 yards.
Made according to the specifications of the United States Government.

7 ounce	.....	$0.16
8 "	.....	.18
9 "	.....	.20
10 "	.....	.23
12 "	.....	.27
15 "	.....	.33

DOUBLE FILLING

This Duck is made of two or more double and twisted yarns in the filling, with double thread warp.
Bales about 800 yards.
Bolts about 50 yards.

BRANDS: Privateer U. S. A., Kenwood, Army, Monarch, Selkirk, Bear

8 ounce	.....	29	inches	wide
9 "	.....	29	"	"
10 "	.....	29	"	"
12 "	.....	29	"	"
15 "	.....	29	"	"
10 "	.....	36	"	"
12 "	.....	36	"	"
11 "	.....	40	"	"
8 "	Fabric	56	"	"

SINGLE FILLING

This Duck is made of a single twisted yarn in both filling and warp.
Bales about 800 yards.
Bolts about 50 yards.

BRANDS: Oregon, Lakewood, Magnolia, Lakeview, Newhaven

7 ounce	.....	29	in. wide	8 ounce	.....	36	in. wide
8 "	.....	29	" "	10 "	.....	36	" "
9 "	.....	29	" "	12 "	.....	36	" "
10 "	.....	29	" "	7 "	.....	40	" "
12 "	.....	29	" "	8 "	.....	40	" "
15 "	.....	29	" "	10 "	.....	40	" "

11 ounce ..... 40 in. wide

SPECIAL YACHT DUCK

28½ Inch

7 ounce	.....	$0.24		10 ounce	.....	$0.31	
8 "	.....	.26		12 "	.....	.35	
9 "	.....	.28		15 "	.....	.41	

YACHT DUCK

28½ Inch

7 ounce	.....	$0.17		10 ounce	.....	$0.24	
8 "	.....	.19		12 "	.....	.29	
9 "	.....	.21		15 "	.....	.35	

TWILLS AND DRILLS

Bales about 1,000 yards. Pieces about 50 yards.

30 in., 3 yard Drill	.....	$	.....	
30 " Standard Drill, 285	.....		.....	
37 " " 235	.....		.....	
37 " " 265	.....		.....	
30 " " " 250	.....		.....	
30 " 5½ oz. Yacht Twill	.....		.....	
30 " 6½ " G. B. C. Special Yacht Twill			.....	
30 " 8 " G. B. C. " " "			.....	
27 " 8 " Khaki Drill	.....		.....	

IMPORTED UNION SILK

For Fancy Yacht Sails. 36 inches wide.

No. 7	.....	$	.....
No. 8	.....		.....
No. 9	.....		.....
No. 10	.....		.....
No. 11	.....		.....

G. B. C. SPECIAL SAIL CLOTH

30 inch	.....	$	.....
39 "	.....		.....

B. C. SPECIAL SAIL CLOTH

30 inch, No. 1	.....	$	.....
30 " " 2	.....		.....

We make a specialty of fine fabrics, both domestic and imported, for yacht sails, and can be depended on for all the up-to-date goods in this line.

WOOL BUNTING

U. S. Bunting Co.

Rolls 40 yards each. Red, White, Blue, Green, Black, Yellow.

18 in. Standard, $	.....	24 in. Yacht, $	.....
24 " "	.....	18 " Anchor,	.....
18 " Yacht	.....	24 " "	.....

18 in. R. R. Signal, $ .....

COTTON DUCK

COLORED DUCKS

DOUBLE AND SINGLE FILLING

Bales about 800 yards. Pieces about 50 yards. 28 inches wide

Tan, Brown, and Slate.

7 oz., 28 in.	$.....
8 " 28 "	.....
9 " 28 "	.....
10 " 28 "	.....
12 " 28 "	.....
10 " 40 "	.....
12 " 36 "	.....

BOOKBINDERS' AND TRUNK-MAKERS' DUCK

Below is a partial list of the Special Duck we carry

44 in. Drab and Slate Lewiston, No. 1	$.....
44 " Slate and Brown, Lewiston No. 2	.....
44 " Drab, D. F. Linen Finish	.....
36 " Salmon or Baker Plaid	.....
40 " Drab, Starched Open Pick, 8½, 9 & 10 oz.	.....
40 " " Open Pick	.....

HOSE DUCK

Rolls about 100 to 200 yards. 40 inches wide

Open weave, giving heavy appearance: for trunk-makers and hose manufacturers

12, 14, 16, 18, and 20 ounce.

BLACK ENAMELED TRUNK DUCK, GLAZED

In 12-yard pieces only

44 in. No. 8 Standard Duck	$.....
44 " No. 10 " "	.....
44 " No. 12 " "	.....
45 " Special.	

WIDE DUCK

Rolls about 100 yards

Tan, Brown and Slate.

44 in., No. 4	$.....
44 " No. 6	.....
44 " No. 8	.....
44 " No. 10	.....
50 " No. 10	.....
60 " No. 10	.....

Any width or weight dyed to order.

ENAMELED GOODS

July 1, 1907

List Price Per Yard

4-4 Black Enameled Muslin	19½
5-4 " " "	21
6-4 " " "	26½
4-4 " " Drill	29
5-4 " " "	30
50 in. " " "	32
6-4 " " "	37
38 in. " " Duck	36
5-4 " " "	38
50 in. " " "	40
6-4 " " "	44
60 in. " " "	59
5-4 Tan Back Drill	39
48 in. " " "	41
5-4 Imitation Gum Drill	30
50 in. " " "	32
50 in. Leather Cloth	85
6-4 in. " "	91
60 in. " "	97
Colored Back Muslin, additional	4
" " Drill and Duck	7
Figured or Printed Back, additional	5
5-4 Green and Brown Muslin	26½
6-4 " " " "	33½
5-4 Yellow, Drab, Blue and Imitation Crimson Muslin	33½
Green and Brown Drill and Duck, additional	10
Yellow, Drab, and Blue Drill, and Duck, additional	16
Oil Back, additional	14
5-4 English Moleskin	88
Cream, Tan, Russet and White Shoe Goods	23
Green, Brown, Chocolate, Wine and all other colors	23
Double Japanned, additional	40

COTTON DUCK

FOR

Tents, Awnings, Sails, Paulins, Horse and Wagon Covers, Stack and Machine Covers, Boat Covers, Floor Cloths, Clothing, Harvester Aprons, Belting and Hose, Bookbinders, Trunk-makers, Upholsterers, Sporting Goods, Scenery and Drop Cloths, Mail Bags, Coal Bags, Feed Bags, Tool Bags, Coin Bags; ROOFING---Cars, Buildings, Verandas, Boat Decks.

COTTONDUCK

PARAFFINED OUNCE DUCKS AND DRILLS

WATER AND MILDEW PROOF

	White	Brown
8 oz. 28½ in. Army	$0.23	$0.25
10 " 28½ " "	.28	.30
12 " 28½ " "	.32	.34
15 " 28½ " "	.39	.42
13 " 37 " " 10 oz. Fab.	.34	.36
10 " 36 " " 8 " "	.28	.30
11 " 40 " " 8 " "	.29	.31
30 in. 2.85 Standard Drill	.15	.17
30 " 2.50 Drill	.18	.20
36 " Heavy Drill	.22	.24

PARAFFINED WIDE DUCKS

	White				Brown			
	No. 6	No. 8	No. 10	No. 12	No. 6	No. 8	No. 10	No. 12
36 in.	$0.55	$0.50	$0.44	$0.38	$0.58	$0.52	$0.46	$0.40
40 "	.61	.56	.49	.43	.64	.58	.51	.45
42 "	.64	.59	.51	.45	.67	.61	.53	.47
44 "	.67	.61	.54	.46	.70	.63	.56	.48
46 "	.70	.64	.56	.48	.73	.67	.59	.51
48 "	.73	.67	.58	.50	.76	.70	.61	.53
50 "	.76	.70	.63	.52	.78	.73	.66	.55
54 "	.82	.76	.68	.58	.85	.79	.72	.62
60 "	.91	.84	.74	.63	.95	.87	.78	.67
66 "	1.00	.92	.80	.69	1.05	.97	.84	.73
72 "	1.10	1.00	.88	.76	1.17	1.06	.94	.82

Number 10 and Ounce Duck is kept in stock.
The other numbers are finished to order.

BLACK OILED DUCK WATERPROOF

OUR OWN MANUFACTURE

We guarantee our goods not to stick or crack, and to be absolutely waterproof.

29 in., 10 oz.	$0.50
36 " No. 10	.72
48 " " 10	.96
54 " " 10	1.08
60 " " 10	1.20
72 " " 10	1.44
84 " " 10	1.68
96 " " 10	1.92

YELLOW OILED DUCK WATERPROOF

OUR OWN MANUFACTURE

These goods are used by many in preference to the Black Oiled.

29 in., 10 oz.	$0.40
36 " No. 10	.60
48 " " 10	.80
54 " " 10	.90
60 " " 10	1.00
72 " " 10	1.20
84 " " 10	1.40
96 " " 10	1.60

WILFORD MATCHLESS WATERPROOF CLOTH

IMPORTED

For Hatch Covers, Paulins, etc., 40½ Inches Wide

These goods are made in Belgium from selected flax; they are dyed a dark brown, and are chemically treated in a way which renders the fabric waterproof without destroying the strength or flexibility of the fiber.

OLD CANVAS

We have in stock at all times, Old Sails, and can furnish at short notice anything made of same.

COTTON DUCK

HEAVY NAUGHT OR PAPER FELT DUCK

Nos.	3/10	4/10	5/10	6/10	7/10	8/10
Width						
26 in.	$0.55	$0.57	$0.60	$0.63	$0.65	$0.68
30 "	.63	.66	.69	.72	.75	.78
34 "	.71	.75	.78	.82	.85	.88
36 "	.76	.79	.83	.86	.90	.94
44 "	.92	.97	1.01	1.05	1.10	1.14
48 "	1.01	1.05	1.10	1.15	1.20	1.25
50 "	1.05	1.10	1.15	1.20	1.25	1.30
54 "	1.13	1.19	1.24	1.29	1.35	1.40
56 "	1.17	1.23	1.29	1.34	1.40	1.45
60 "	1.26	1.32	1.38	1.44	1.50	1.56
62 "	1.30	1.36	1.42	1.48	1.55	1.61
64 "	1.34	1.40	1.47	1.53	1.60	1.66
66 "	1.38	1.45	1.51	1.58	1.65	1.71
68 "	1.42	1.49	1.56	1.63	1.70	1.76
70 "	1.47	1.54	1.61	1.68	1.74	1.81
72 "	1.51	1.57	1.65	1.72	1.79	1.87
74 "	1.55	1.62	1.70	1.77	1.84	1.92
76 "	1.59	1.67	1.74	1.82	1.89	1.97
78 "	1.63	1.71	1.79	1.87	1.94	2.02
80 "	1.68	1.75	1.83	1.91	1.99	2.07
82 "	1.72	1.80	1.88	1.96	2.04	2.12
84 "	1.76	1.84	1.93	2.01	2.09	2.18
86 "	1.80	1.89	1.97	2.06	2.14	2.23
88 "	1.84	1.93	2.02	2.10	2.19	2.28
90 "	1.88	1.97	2.06	2.15	2.24	2.33
92 "	1.93	2.02	2.11	2.20	2.29	2.38
94 "	1.97	2.06	2.15	2.25	2.34	2.44
96 "	2.01	2.10	2.20	2.30	2.39	2.49
98 "	2.05	2.15	2.25	2.34	2.44	2.54
100 "	2.09	2.19	2.29	2.39	2.49	2.59
102 "	2.13	2.23	2.34	2.44	2.54	2.64
104 "	2.18	2.28	2.38	2.49	2.59	2.69
106 "	2.22	2.32	2.43	2.53	2.64	2.75
108 "	2.26	2.37	2.47	2.58	2.69	2.80
110 "	2.30	2.41	2.52	2.63	2.74	2.85
112 "	2.34	2.46	2.57	2.68	2.79	2.90
114 "	2.39	2.49	2.61	2.73	2.84	2.95
116 "	2.43	2.54	2.66	2.77	2.89	3.00
118 "	2.47	2.59	2.70	2.82	2.94	3.06
120 "	2.51	2.63	2.75	2.87	2.99	3.11
122 "	2.70	2.83	2.95	3.08	3.21	3.34
124 "	2.74	2.87	3.00	3.13	3.26	3.39
126 "	2.79	2.92	3.05	3.18	3.32	3.45
128 "	2.83	2.96	3.10	3.23	3.37	3.50
130 "	2.88	3.01	3.15	3.28	3.42	3.56
132 "	2.92	3.06	3.20	3.33	3.47	3.61
133 "	3.10	3.25	3.39	3.54	3.69	3.84
134 "	3.12	3.27	3.42	3.57	3.72	3.87
136 "	3.17	3.32	3.47	3.62	3.77	3.92
138 "	3.22	3.37	3.52	3.68	3.83	3.98
140 "	3.27	3.42	3.57	3.73	3.88	4.04
142 "	3.32	3.47	3.62	3.79	3.94	4.10

SUBJECT TO DISCOUNT

26 to 120 in.	Per lb.	$0.35
121 " 132 "	"	.37
133 " 144 "	"	.39

Siamese Dryer Felt. Price quoted on application.

"LAKESIDE" AWNING STRIPES

Pieces about 50 yards each. Bales about 800 yards each Cases about 1,100 yards each

Standard Duplex, Blue, A. D. G. I. T.	31 in.	$.....
Standard Duplex, Brown, A.D.G.I.S.T.	"	.....
Standard Duplex, Tan, Nos. 22, 24, 25..	"	.....
Standard Duplex, Green, Nos. 32, 33, 34..	"	.....
Yale, Blue, Nos. 40, 41, 42, 43, 44, 45....	"	.....
Van Dyke, Brown, Nos. 51, 52, 53, 54....	"	.....
Princeton, Tan, Nos. 60, 61, 63, 64, 65, 66.	"	.....
Illinois Tan, Nos. 72, 73, 74.....	"	.....
Dartmouth, Green, Nos. 120, 121, 122, 123, 124, 125, 126.....	"	.....
Harvard, Red, Nos. 140, 141, 142, 143, 144.	"	.....
Chicago, Terra Cotta, Nos. 162, 164.....	"	.....
Triplex, Nos. 172, 173.....	"	.....
10 oz. Army, Blue and Brown, Nos. 300, 301.....	28½ in.	.....
9 oz. Army, Blue, Nos. 400, 500, 505, 510...	"	.....
9 oz. Army, Brown, Nos. 401, 600, 605, 610.....	"	.....
9 oz. Army, Tan, Nos. 700, 705, 710.....	"	.....
9 oz. Army, Green, Nos. 800, 805, 810....	"	.....
Carplex A. B. C.....	32 in.	.....
Awning Ducks, Red.....	29 in.	.....
" " Green.....	"	.....
" " Blue.....	"	.....
" " Yellow.....	"	.....
" " Tan.....	"	.....

FANCY STRIPES

We carry a very complete assortment of Fancy Awning Stripes and we are constantly getting up novelties in these goods.

We issue, every spring, a sample book, showing over 100 patterns of stripes, which we send to the trade without charge.

MACHINE THREAD

On Spools, Per Dozen

	500 Yards		1,200 Yards		2,400 Yards	
	Unbleach'd	Blk. or Colors	Unbleach'd	Blk. or Colors	Unbleach'd	Blk. or Colors
11-20..3 Cord	$	$	$	$	$	$ .....
30.. "	.....	.....	.....	.....	.....	.....
36.. "	.....	.....	.....	.....	.....	.....
12-20..4 Cord	.....	.....	.....	.....	.....	.....
30.. "	.....	.....	.....	.....	.....	.....
36.. "	.....	.....	.....	.....	.....	.....
12-20..6 Cord	.....	.....	.....	.....	.....	.....
30.. "	.....	.....	.....	.....	.....	.....
36.. "	.....	.....	.....	.....	.....	.....

Per Tube

	4,800 Yds.		7,200 Yds.		9,600 Yds.		1,2000 Yds.	
	Unbleh.	Blk. or Col.	Unbleh.	Blk. or Col.	Unbleh.	Blk. or Col.	Unbleh.	Blk or Col
12-20 3 Cord	$	$	$	$	$	$	$	$ ....
30 "	.....	.....	.....	.....	.....	.....	.....	.....
36 "	.....	.....	.....	.....	.....	.....	.....	.....
12-20 4 Cord	.....	.....	.....	.....	.....	.....	.....	.....
30 "	.....	.....	.....	.....	.....	.....	.....	.....
36 "	.....	.....	.....	.....	.....	.....	.....	.....
12-20 6 Cord	.....	.....	.....	.....	.....	.....	.....	.....
30 "	.....	.....	.....	.....	.....	.....	.....	.....
36 "	.....	.....	.....	.....	.....	.....	.....	.....

FLAGS AND BURGEES

UNITED STATES FLAGS

Best Bunting

All wool double warp. Made in the best manner, from the best goods.

All flags 4 feet long and less, have 13 stars, larger sizes full number stars.

NEW LIST, NOVEMBER, 1908

1⅓x2	ft.	each $1.50	5⅓x 9	ft.	each $6.75	12 x24	ft.	each $36.00
1⅔x2½	"	" 1.50	5⅓x10	"	" 8.00	12 x26	"	" 38.50
2 x3	"	" 1.50	6 x12	"	" 9.25	15½x30	"	" 55.00
2½x4	"	" 2.00	7 x14	"	" 12.75	20 x30	"	" 65.00
3 x5	"	" 3.00	8 x16	"	" 17.25	20 x36	"	" 80.00
3 x6	"	" 3.50	10 x18	"	" 22.00	20 x40	"	" 89.00
4⅓x7	"	" 4.80	10 x20	"	" 24.00	30 x50	"	" 165.00
4⅓x8	"	" 5.50	10 x22	"	" 26.00	40 x60	"	" 265.00

COMPANY BUNTING FLAGS

Company Flag, 4⅓x5½ feet (new standard)...$7.50 Company Flag, 6x6½ feet (old standard) $11.00
Same, with staff, spear, fringe, tassels and boot 18.00 Same, with staff, spear, fringe, tassels and boot..22.00

SILK COMPANY FLAGS

With either Silk Ribbons to tie on Pole or Slip Heading to slip over Pole

U. S. National Regulation Flag, made of best quality flag silk, with gold-leaf stars, trimmed with 2-inch gold colored Silk bullion fringe, 7-inch Silk tassels and cord, imitation walnut or cherry pole with tube joint and brass spearhead, patent leather belt, and enameled cloth cover.

4⅓x5½ feet.....$35.00
6 x6½ " 48.00

Screw Joint, $1.35 Extra

U. S. National Regulation Flag made of best quality Flag Silk, gold-leaf stars, trimmed with 2-inch gold colored Silk bullion fringe, and 7-inch Silk tassels and cord, ash pole, with screw joint, and fine 6-inch gilt eagle and enameled cloth cover.

4⅓x5½ feet.....$40.00
6 x6½ " 53.00

Double Screw Joint, 50 Cents Extra

U. S. National Regulation Flag, made of the best quality banner Silk, sewed by machine, gold-leaf stars, trimmed with 2-inch gold colored Silk bullion fringe, 7-inch Silk tassels and cord, ash pole with double screw joint and fine 6-inch gilt eagle, patent leather belt and enameled cloth cover.

4⅓x5½ feet.....$50.00
6 x6½ " 64.00

We furnish Stars Embroidered by Machine or Silk Sewed on at same list prices.

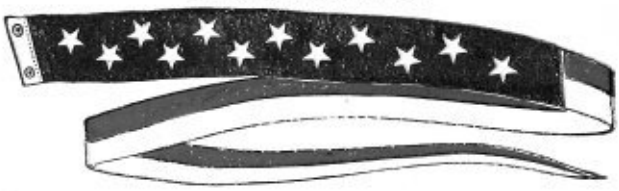
Flags trimmed with 2-inch gilt bullion fringe and 7-inch gilt bullion tassels with gilt cord instead of silk fringe and silk tassels, are furnished in sizes:

4⅓x5½ feet.....extra $2.00
6 x6½ " ..... " 3.00

U. S. YACHT ENSIGN

1⅓x	2	feet, each,	$2.00
2 x	3	" "	2.25
2½x	4	" "	2.75
3 x	5	" "	3.00
4 x	6	" "	4.00
4⅓x	7	" "	4.80
4⅓x	8	" "	5.50
5⅓x	10	" "	8.00
6 x	12	" "	9.25
7 x	14	" "	12.75

U. S. PENNANTS



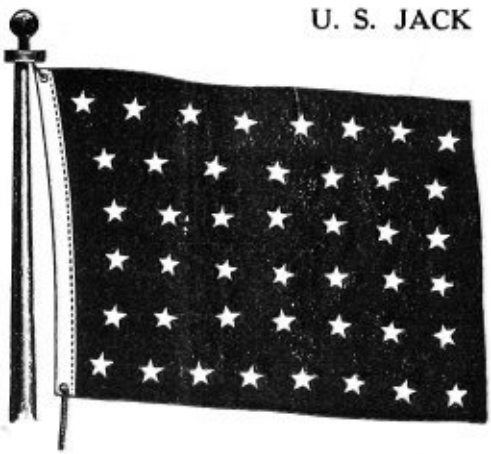
Length, Feet	6	8	10	12	15	18	20	25	30	35	40	50
Width at Head, in.	9	9	9	9	9	12	12	18	18	18	24	24
Price..... each	$1.50	$2.00	$2.50	$3.00	$3.75	$4.50	$5.00	$6.25	$7.50	$8.75	$10.00	$12.50

STREAMERS

Same as Pennants, without Blue Field and Stars

Length, Feet	6	8	10	12	15	18	20	25	30	35	40	50
Width at Head, in.	9	9	9	9	9	12	12	18	18	18	24	24
Price..... each	$0.90	$1.20	$1.50	$1.80	$2.25	$2.70	$3.00	$3.75	$4.50	$5.25	$6.00	$7.50

U. S. JACK



1½x	2	feet, each,	$2.00
2 x	3	" "	2.50
3 x	4½	" "	3.50
3¾x	5	" "	4.00
4½x	6	" "	5.00
6 x	7	" "	6.25
7½x	9½	" "	10.50

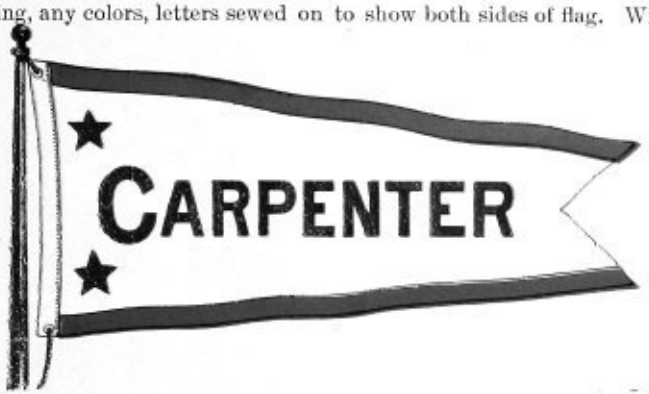
SPECIMEN DESIGNS OF PRIVATE AND CLUB SIGNALS

This list for above or similar designs. Special for extra designs.

12x18	inches.....	each,	$1 00
18x24	"	"	1.75
20x30	"	"	2.25
24x36	"	"	3.00
28x42	"	"	3.50
32x48	"	"	4.00
40x60	"	"	6.50

BURGEES

Made of best Wool Bunting, any colors, letters sewed on to show both sides of flag. With or without border.



Fancy lettering or designs extra. Widths given are regular, but can be varied to suit the purchaser, either wide or narrower. In ordering, specify the colors wanted, in body, border (if wanted), and letters.

Length, feet.....	5	6	8	10	12	15	18	20	21	25	30
Width at head, feet.....	2½	3	4	5	6	7½	9	10	11	12	15
Width at swallow, feet.....	1¼	1½	2	2½	3	3¾	4½	5	5½	6	7½
Plain, with 10 letters or less.....	$3.50	$3.75	$5.00	$5.75	$7.75	$10.00	$12.75	$14.00	$17.00	$21.50	$31.00
With 2 stars at head, either red, white or blue, extra.....	.30	.30	.35	.35	.45	.45	.75	.75	.75	1.00	1.00
With points at head, either red, white or blue, extra.....	.80	.80	1.30	1.30	1.75	1.75	2.00	2.00	2.00	2.50	3.00
With stars in border, either red, white or blue, extra.....	1.00	1.15	1.50	1.90	2.00	2.40	3.00	3.30	3.30	4.40	5.00
With points in border, either red, white or blue, extra.....	2.00	2.00	2.35	3.60	4.00	5.25	6.00	7.00	7.00	8.50	9.50
Price of each letter above 10 letters, extra.....	.15	.19	.23	.30	.33	.38	.44	.48	.52	.63	.63

U. S. WEATHER SIGNALS

As adopted by the U. S. Weather Signal Bureau. Made in best manner of best Bunting, with manila rope distance lines and toggles.

No. 1 White Flag
Clear or Fair Weather

No. 2 Blue Flag
Rain or Snow

No. 3 White and Blue Flag
Local Rains

No. 4 Black Triangular Flag
Temperature Signal

No. 5 White Flag with black square in center
Cold Wave

Size 3 x3 feet.....per set of 5 $6.50
" 4 x4 " ..... " " " 5 10.00
" 4½x4½ " ..... " " " 5 13.00

Size 6x6 feet.....per set of 5 $19.00
" 8x8 " ..... " " " 5 32.00

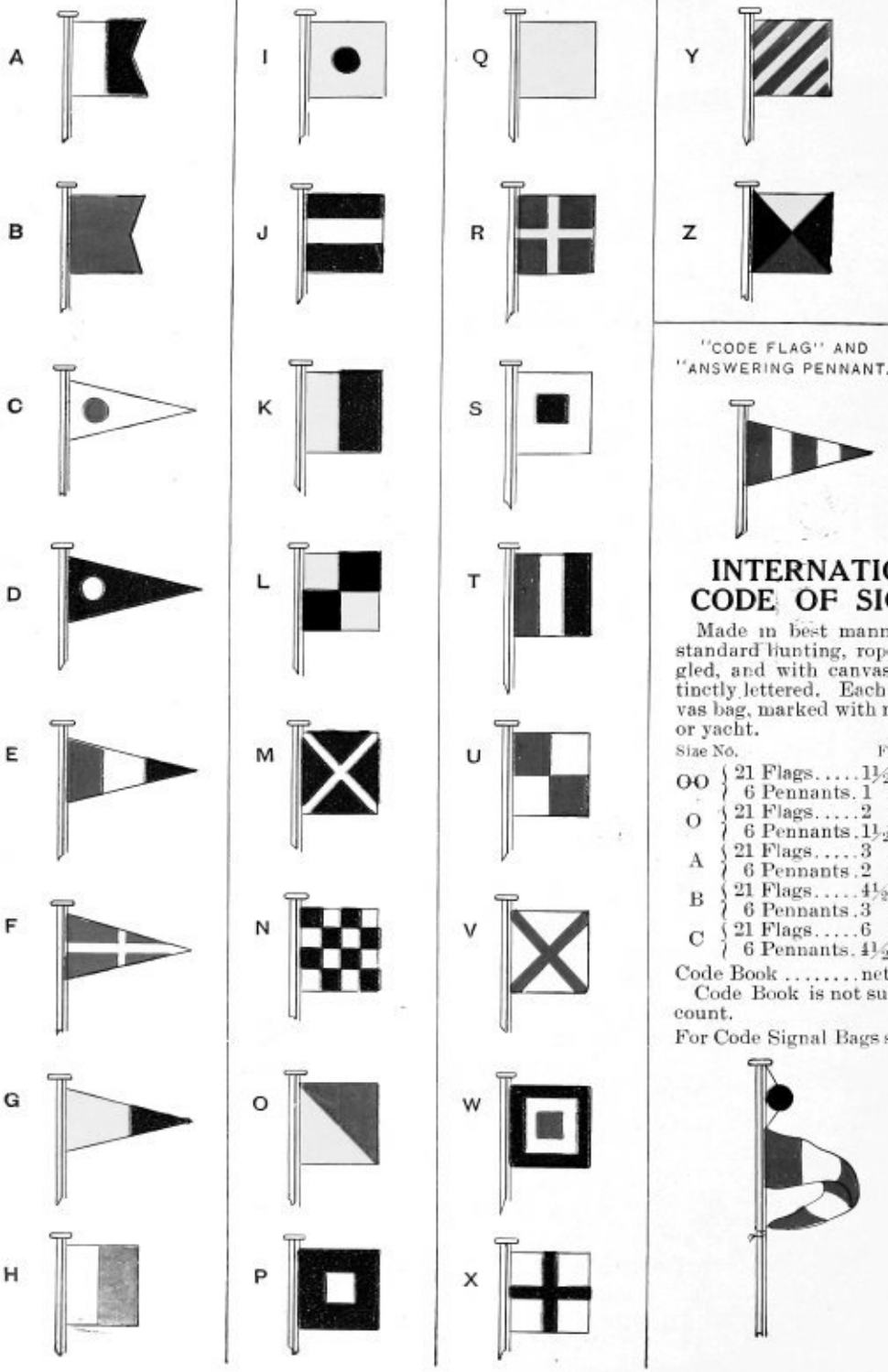
STORM SIGNALS

MADE IN THE SAME WAY AS THE WEATHER SIGNALS

Size 1. 1 Square Flag and 2 Pennants, 3x3 feet, per set of three..... $4.00
" 2. 1 " " " " 4x4 " " " " " 6.50
" 3. 1 " " " " 6x6 " " " " " 11.50
" 4. 1 " " " " 8x8 " " " " " 20.00

WOOL BUNTING

Red, white, blue, green, yellow, black. Per roll of 40 yards, Yacht, Standard, Signal, 18 inches.....



"CODE FLAG" AND "ANSWERING PENNANT."

INTERNATIONAL CODE OF SIGNALS

Made in best manner of U. S. standard hunting, roped and toggled, and with canvas heads, distinctly lettered. Each set in canvas bag, marked with name of ship or yacht.

Size No.		Feet	Per Set
OO	21 Flags	1½ x 2	$35.00
	6 Pennants	1 x 4	
O	21 Flags	2 x 3	45.00
	6 Pennants	1½ x 6	
A	21 Flags	3 x 4	70.00
	6 Pennants	2 x 8	
B	21 Flags	4½ x 6	118.00
	6 Pennants	3 x12	
C	21 Flags	6 x 8	162.00
	6 Pennants	4½x16	

Code Book ..... net each, $3.00

Code Book is not subject to discount.

For Code Signal Bags see page 255.

G. B. C. SIGNAL BAG

FOR CODE SIGNALS

Has a separate pocket for each Signal, and also for Code Book, Ensign and Burgee

Bag for Size	
00	each, $4.50
0	" 5.25
A	" 6.00
B	" 7.00
C	" 7.50

FOREIGN NATIONS' FLAGS

Standard Bunting

NATIONAL FLAGS

The countries having a common Man-of-War Flag and Merchant Flag, which are called National Flags.

Nation		2x3 ft.	2½x4 ft.	3x5 ft.	4x6 ft.	4½x7 ft.	5x8 ft.	6x10 ft.	8x12 ft.	9x15 ft.	12x20 ft.
Belgium	each	$0.90	$1.50	$2.20	$3.00	$3.80	$4.60	$6.30	$10.00	$14.00	$23.00
Brazil	"	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Canada	"	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Chile	"	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Congo	"	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Cuba	"	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Corea	"	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Ecuador	"	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
France	"	.90	1.50	2.00	2.75	3.50	4.30	5.80	8.50	13.00	22.00
Great Britain	"	1.80	2.70	3.50	5.25	6.00	7.50	10.50	15.00	20.00	30.00
Ireland	"	1.80	2.70	3.50	5.50	6.50	8.00	10.50	15.00	20.00	30.00
Liberia	"	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Montenegro	"	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Morocco	"	.90	1.50	2.00	2.75	3.50	4.30	5.80	8.50	13.00	22.00
Netherlands	"	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
New Zealand	"	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Panama	"	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Paraguay	"	1.80	2.70	3.50	5.25	6.00	7.50	10.50	15.00	20.00	30.00
Persia	"	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Portugal	"	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Scotland	"	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Switzerland	"	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Transvaal	"	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Turkey-Egypt	"	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Uruguay	"	1.80	2.70	3.50	5.25	6.00	7.50	10.50	15.00	20.00	30.00

In ordering state National Flags.

For Merchants' Flags, see page 256.

PRINTED SILK UNITED STATES FLAGS

Quantities less than half a dozen of any size will invariably be charged at piece prices.

Width—Length	Not Mounted		Mounted on Staffs with Gilt Tops		Fringed with Yellow Cut Silk Fringe	
	Per Piece	Dozen	Per Piece	Dozen	Not Mounted per Piece	Mounted on Staffs with Gilt Tops, per Piece
2 x 3 inches	$0.03	$0.30	$0.04	$0.40	.....	.....
4 x 6 "	.08	.80	.09	.90	$0.22	$0.24
5 x 8 "	.11	1.10	.14	1.40	.25	.28
7 x 10 "	.12	1.20	.16	1.60	.28	.32
8 x 12 "	.16	1.60	.20	2.00	.32	.36
10 x 15 "	.27	2.70	.31	3.10	.50	.54
12 x 18 "	.31	3.10	.35	3.50	.56	.60
16 x 24 "	.57	5.70	.63	6.25	1.00	1.04
24 x 36 "	1.14	11.40	1.24	12.40	2.10	2.20
32 x 48 "	1.94	19.40	2.10	21.00	3.15	3.30
36 x 60 "	3.50	.....	3.75	.....	5.25	5.50
48 x 72 "	6.00	.....	6.50	.....	9.20	9.70
2 x 3 "	mounted on pins		.05	.45	.....	.....
4 x 6 "	" " "		.11	1.10	.....	.....

For Printed Silk Flags, Foreign Nations, see page 256.

FOREIGN NATIONS' FLAGS

STANDARD BUNTING

MERCHANT FLAGS

Nation	2x3 ft.	2½x4 ft.	3x5 ft.	4x6 ft.	4½x 7ft.	5x8 ft.	6x10 ft.	8x12 ft.	9x15 ft.	12x20 ft.
Argentine Republic.. each	$0.90	$1.50	$2.20	$3.00	$3.80	$4.60	$6.30	$10.00	$14.00	$23.00
Austro Hungary.... "	3.00	4.00	5.00	8.00	10.00	13.00	18.00	25.00	30.00	45.00
Bolivia..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
China..... "	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Colombia..... "	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Costa-Rica..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Denmark..... "	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Germany..... "	.90	1.50	2.00	2.75	3.50	4.30	5.80	8.50	13.00	22.00
Greece..... "	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Great Britain..... "	1.80	2.70	3.50	5.25	6.00	7.50	10.50	15.00	20.00	30.00
Guatemala..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Haiti..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Honduras..... "	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Italy..... "	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Japan..... "	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Mexico..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Nicaragua..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Norway..... "	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Peru..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Roumania..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Russia..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Salvador..... "	1.80	2.70	3.50	4.75	5.50	6.50	8.50	13.00	17.00	26.00
Santo Domingo..... "	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Siam..... "	1.80	2.70	3.50	5.25	6.00	7.50	10.50	15.00	20.00	30.00
Spain..... "	.90	1.50	2.20	3.00	3.80	4.60	6.30	10.00	14.00	23.00
Sweden..... "	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00
Venezuela..... "	1.50	2.00	2.80	3.75	4.50	5.50	7.50	12.00	16.00	25.00

In ordering, state Merchants' Flags.

For National Flags, see page 255.

PRINTED SILK FLAGS OF FOREIGN NATIONS

Width Length	Not Mounted per Piece	Not Mounted Dozen	Mounted on Staffs with Gilt Tops per Piece	Mounted on Staffs with Gilt Tops Dozen	Fringed with Yellow Cut Silk Fringe Not Mounted per Piece	Fringed with Yellow Cut Silk Fringe Mounted on Staffs with Gilt Tops per Piece
2x 3 inches.....	$0.04	$0.40	$0.05	$0.50	.....	.....
4x 6 "	.09	.90	.10	1.00	$0.23	$0.25
8x12 "	.24	2.40	.28	2.80	.42	.46
12x18 "	.47	4.70	.52	5.20	.72	.76
24x36 "	1.70	17.00	1.80	18.00	2.65	2.75
2x 3 "	mounted on	pins	.06	.50	.....	.....
4x 6 "	"	"	.12	1.20	.....	.....

NOTICE: We always send the flags *unmounted* if the order does not state that flags are wanted *mounted.*

For Printed U. S. Silk Flags, see page 255.

U. S. MUSLIN FLAGS

SEWED STARS AND STRIPES

Stars Sewed on Both Sides

With Canvas Headings and Grommet

Sewed throughout in the same superior manner as our all wool bunting flags. The colors are bright and when displayed resemble silk flags very closely.

Size	Each
2 x 3 feet, 13 stars	$0.70
2½x 4 " 13 "	.90
3 x 5 " 45 "	1.20
4 x 6 " 45 "	1.40
4 x 7 " 45 "	1.70
4 x 8 " 45 "	1.90
5 x 8 " 45 "	2.10
5 x10 " 45 "	2.50
6 x 9 " 45 "	2.80
6 x10 " 45 "	3.00
6 x12 " 45 "	3.30
8 x12 " 45 "	4.80
8 x15 " 45 "	5.60
9 x14 " 45 "	6.00
9 x18 " 45 "	6.60
10 x15 " 45 "	6.40
10 x16 " 45 "	6.80
10 x18 " 45 "	7.70
10 x20 " 45 "	8.40
12 x18 " 45 "	8.60
12 x20 " 45 "	9.60
12 x22 " 45 "	10.40
12 x24 " 45 "	11.25
13 x24 " 45 "	12.00
13 x25 " 45 "	12.50
15 x25 " 45 "	14.00
20 x30 " 45 "	20.00
20 x36 " 45 "	27.00
4⅓x 5½" U. S. Regulation	1.80
6 6½" " "	2.50

U. S. COTTON FLAGS

LIBERTY BRAND; FAST COLOR

All except 1½x2 and 2x3 feet finished with canvas heads and grommets.

Size	Per Doz.	Each
1½x2 feet	$1.20	$0.10
2 x3 "	2.30	.20
2½x4 "	4.50	.40
3 x5 "	6.60	.55
4 x6 "	10.50	.90
4 x7 "	13.00	1.10
5 x8 "	17.60	1.50
5 x10 "	19.80	1.60
6 x12 "	27.00	2.25
9 x15 "	44.00	3.75

U. S. PRINTED MUSLIN FLAGS

MOUNTED ON STICKS

Full Number of Stars

Best Quality, Fast and Bright Oil Colors, will Stand Rain

No.	Width Length	Per Gross
1	2 x 3 inches.	$0.27
2	2½x 4 "	.32
3	3½x 6 "	.53
4	4½x 7½ "	.72
5	6 x 9½ "	1.32
5½	7 x10½ "	1.70
6	8 x14 "	2.56
7	11 x18 "	3.90
7½	12 x22 "	5.00
8A	14 x24 "	5.70
8	18 x27½ "	8.00
9	20 x36 "	13.80
10	27 x43 "	20.00
11	30 x50 "	26.20
11½	36 x56 "	31.40
12	40 x66 "	49.40
12½	40 x72 "	60.80

FLAGS OF FOREIGN NATIONS

PRINTED MUSLIN MOUNTED ON STICKS

Best Quality; Fast and Bright Oil Colors

IN SETS OF 12 DIFFERENT NATIONS

Length	Per Set
10 inches	$0.25
14 "	.36
18 "	.50
23 "	1.00
36 "	1.40

IN SETS OF 24 DIFFERENT NATIONS

Length	Per Set
18 inches	$0.90
23 "	2.00
36 "	2.80

IN SETS OF 42 DIFFERENT NATIONS

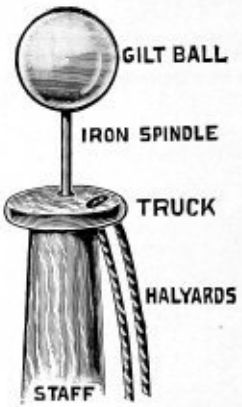
Length	Per Set
18 inches	$2.00
23 "	4.00
36 "	6.00

LIGNUM-VITAE MAST-HEAD TRUCKS

Size inches	Two Holes Each	One Brass Sheave and Two Holes Each	Two Brass Sheaves Each
3	$0.20	$0.45	$0.65
3½	.22	.50	.70
4	.25	.55	.80
4½	.28	.60	.90
5	.33	.65	1.00
5½	.38	.75	1.10
6	.45	.85	1.20
6½	.75	1.25	1.60
7	1.00	1.50	2.00
8	1.50	2.00	2.50
9	....	....	3.50
10	....	....	4.50

GILT BALLS

With Iron Spindles for Poles



Diam. Ball inches	Price Each
2	$0.30
2½	.40
3	.60
4	.75
5	1.15
6	1.50
7	2.50
8	3.00

FLAG STAFFS

Walnut, 9 feet long, Finely Polished, with Brass Ferrule

Plain.....each, $3.15
With brass spear..... " 4.00
" " eagle, 7½ inch..... " 6.75

Either of above with brass screw joint, $2.50 extra.

Above Staffs are suitable for fine silk banners, silk company or regimental flags, etc.

FLAG POLES

Hardwood Mahogany Finish, Complete with Halyards

8 ft.	doz. $15.00	each $1.25
10 "	" 18.00	" 1.50
12 "	" 21.00	" 1.75
14 "	" 25.00	" 2.25
16 "	" 30.00	" 2.50

FLAG POLES

Complete with Mast-Head Truck, Gilt Ball, Halyard and Cleat, Painted One Coat White Lead In One Length

Length.....feet	12	16	20	20	25	25	30	30	35	35	40	40	45	45
Dia. Square Base..inches	3	4	4	6	4	6	6	8	6	8	8	10	8	10
Dia. Round Top.. "	1½	2	2	2½	2	2½	2½	3	2½	3	3	3½	3	3½
Each.....	$5.75	6.25	8.75	11.25	11.25	16.00	20.00	27.50	27.50	35.00	44.00	57.50	57.50	65.00

Length.....feet	50	50	55	60	60	65	70
Dia. Square Base.....inches	8	10	10	10	12	12	12
Dia. Round Top..... "	3½	4	4	4	4½	4½	5
Each.....	$65.00	85.00	95.00	107.50	125.00	145.00	170.00

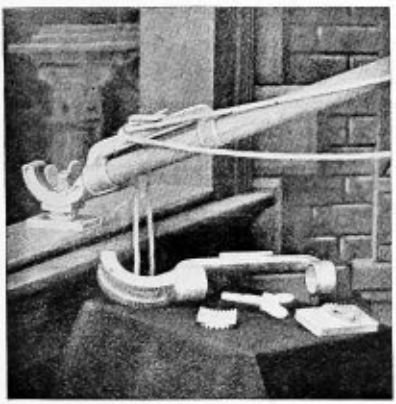
SCHOONER MAST IN TWO PIECES AS ILLUSTRATED

Length.....feet	70	85	100	125	150
Dia. Square Base.....inches	10	10	12	14	16
Dia. Round Top..... "	2½	2½	3	4	5
Each..... "	$140.00	175.00	220.00	375.00	625.00

FLAG STAFF BRACKETS

INEEDA GALVANIZED IRON

It has fewer parts than any other Adjustable Bracket. It can be set to nearly four hundred different angles by one Thumb Screw. It leaves only one small casting on window sill when detached. Every Bracket has a Cleat for Flag Halyards.



For Pole,	1¼	inch	Diameter,	each,	$0.75
"	1½	"	"	"	1.00
"	1¾	"	"	"	1.25
"	2	"	"	"	1.50

GALVANIZED IRON FLAG STAFF HOLDERS

For Staffs	½	inch	each,	$0.10
"	⅝	"	"	.12
"	¾	"	"	.15
"	1	"	"	.35
"	1¼	"	"	.45
"	1½	"	"	.50
"	2	"	"	1.00

MAST HEAD BALLS

Size inches	Pine	Lignumvitae			Gilding
	Two Holes	Two Holes	One Brass Sheave	Two Brass Sheaves	Net Extra
2	$0.25	$0.30	$0.75	$1.20	$0.50
2½	.25	.40	.75	1.20	.50
3	.25	.50	.75	1.20	.50
3½	.30	.60	.85	1.35	.60
4	.35	.70	.95	1.50	.60
4½	.40	.85	1.10	1.65	.75
5	.50	1.00	1.25	1.85	.90
5½	.60	1.10	1.35	1.95	1.00
6	.75	1.25	1.50	2.25	1.25

FLAG STAFF ORNAMENTS

BRASS SPEARS

Brass Spear,	hollow,	7	inch	each,	$0.40
"	"	10	"	"	.50
"	"	12	"	"	.80
"	solid	6¾	"	"	.80
"	"	8	"	"	1.20
"	"	11	"	"	2.00

BRASS EAGLES

7½	inches,	hollow	each.	$2.50
3½	"	solid	"	1.50
4	"	"	"	2.00
6	"	"	"	3.00
7½	"	"	"	3.50
10¾	"	"	"	4.00

BRASS TIPS OR FERRULES

1	inch, solid	each,	$0.30

BRASS ACORNS

1	inch	hole	each,	$0.15
1¼	"	"	"	.20
1½	"	"	"	.30

BRASS SCREW JOINTS

1	inch	Screw Joint,	plain, smooth	each.	$1.50
1¼	"	"	" "	"	1.60
1½	"	"	" "	"	1.80
1¼	"	"	double, fancy	"	1.80
1½	"	"	" "	"	2.20

BRASS TUBE JOINTS

1	inch	Tube Joint	each,	$0.40
1¼	"	"	"	.45
1⅜	"	"	"	.50

A WORD REGARDING THE SIZES OF TENTS

Attention is called to the fact that our list prices on Tents are based on the actual yardage of cloth in each Tent, which of course is the only fair way to figure list price. When this list was decided on by the manufacturers interested, the sizes were in some instances incorrectly stated, evidently through an oversight.

The following sizes of Tents, either in width or length, will be found to be exactly as stated: 7, 9½, 14, 16, 30 and 35 feet.

The following sizes will differ from the list, for the reason that the goods will not cut profitably to the exact dimensions specified:

Tents listed as		9	feet	will	measure	9½	feet.
"	"	12	"	"	"	11½	"
"	"	18	"	"	"	17½	"
"	"	20	"	"	"	19¾	"
"	"	24	"	"	"	23	"

We trust this information will correct this point on which there has been some complaint in the past.

HINTS ON COTTON DUCK

Cotton Duck, such as is used in the manufacture of Tents, etc., can be divided into three general divisions, based on quality.

BEST. U. S. ARMY STANDARD DUCK

28½ inches wide, made in the following weight, per lineal yard: 8 oz., 10 oz., 12 oz., and 15 oz. Used for all government purposes, and the cleanest, closest, strongest and most durable Duck possible to construct.

GOOD. DOUBLE FILLING DUCK

29 inches wide, made in same weights as Army Duck, but not of such good cotton nor so finely woven. This Duck when made as ours is, is well suited for tents and covers where a first-class article at a moderate price is required. Excepting on government work we used more of this grade than any other.

FAIR. SINGLE FILLING DUCK

29 inches wide, made in 7 oz., 8 oz., 10 oz., 12 oz., per lineal yard. These goods are made of coarser yarns and of poorer cotton than the above grades. They are low priced, and make fairly satisfactory tents and covers where great durability to withstand hard usage is not the first essential. This is the grade on which many department stores quote such very attractive prices, claiming that they are "Standard Army Goods."

A View in One of Our Machine Rooms

Showing girls at work on Tents, Awnings, etc. The Machines are of a special type made for our use and are run entirely by power; the operators are kept very busy, however, merely handling the cloth, as these machines have a speed of 2,500 stitches to the minute.

TENTS

Regular Wall Tents complete with Poles, Stakes, Guys, and Keys

MACHINE SEWED

Prices do not include Flies. Flies for any size Tent will be furnished without poles at one-half the price of the Tent. If higher walls than list specifies are wanted, add 5 per cent to list for each additional 6 inches of wall so added.

Size	Height of Center	Height of Wall	8 oz. Duck Single Filling	10 oz. Duck Single Filling	10 oz. Duck Double and Twisted Filling, or 8 oz. Army	12 oz. Duck Double and Twisted Filling, or 10 oz. Army	12 oz. Army Duck or No. 10	15 oz. Army Duck or No. 8
7 x 7	7	3	$8.00	$9.35	$10.35	$12.25	$14.55	$17.50
7 x 9	7	3	9.50	11.05	12.30	14.60	17.40	20.90
9 x 9	7½	3	10.95	12.80	14.30	17.00	20.30	24.50
9½x12	7½	3	12.90	15.05	16.80	19.95	23.80	28.70
9½x14	7½	3	14.65	17.10	19.10	22.65	27.05	32.55
12 x12	8	3½	15.30	17.95	20.00	23.75	28.40	34.25
12 x14	8	3½	17.30	20.20	22.55	26.80	32.05	38.60
12 x16	8	3½	19.20	22.45	25.05	29.80	35.65	43.00
12 x18	8	3½	21.35	24.95	27.80	33.00	39.45	47.50
14 x14	9	4	20.60	24.15	26.95	32.10	38.45	46.45
14 x16	9	4	22.70	26.65	29.80	35.50	42.55	51.35
14 x18	9	4	25.35	29.75	33.20	39.45	47.30	57.10
14 x20	9	4	28.20	32.75	36.40	43.00	51.15	61.40
14 x24	9	4	31.80	36.90	41.00	48.10	57.25	68.75
16 x16	11	5	28.20	33.20	37.15	44.10	53.05	64.25
16 x18	11	5	30.95	36.40	40.75	48.25	58.00	70.20
16 x20	11	5	34.10	39.80	44.30	52.15	62.30	75.00
16 x24	11	5	38.85	45.20	50.25	59.05	70.40	84.65
16 x30	11	5	47.00	54.75	60.85	71.50	85.30	102.60
16 x35	11	5	52.60	61.30	68.10	80.20	95.60	114.95
18 x18	11	5	35.40	41.60	46.45	55.20	66.20	79.95
18 x20	11	5	39.00	45.45	50.50	59.70	71.10	85.45
18 x24	11	5	43.60	50.85	56.50	66.50	79.25	95.25
18 x30	11	5	52.25	60.90	67.75	79.95	95.35	114.65
18 x35	11	5	58.15	67.80	75.40	89.05	106.25	127.75

We recommend and always insert an Asbestos Stone Pipe Ring— which is noiseless, and can be rolled up without injury— in the rear end wall. Extra for same $3.00

All Tents are made with one door as illustrated. For an extra door, extra, $1.50.

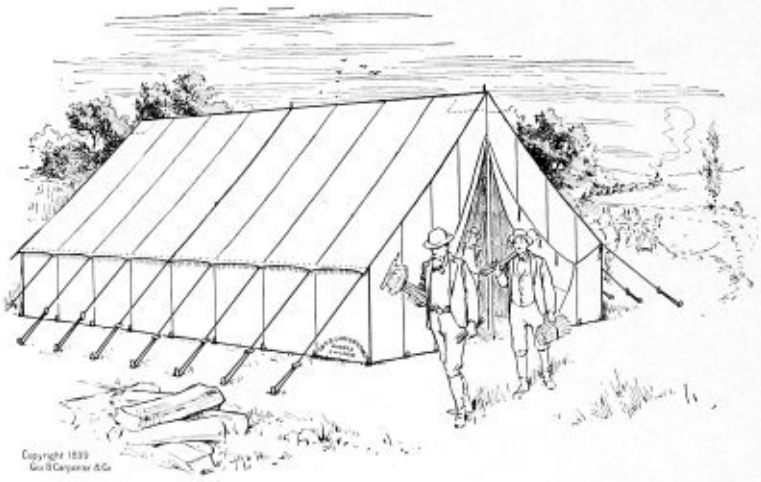
Sod Cloths 9 in. wide are attached to bottom of wall of Tents to keep out insects, at 6 cents per lineal foot

If Rope Ridge is wanted— without poles— same will be furnished without an additional charge.

For Silkelene Wall Tents, see page 273.

LARGE WALL TENTS ROPED

Complete With Poles, Stakes and Guys



MACHINE SEWED

Flies without poles will be furnished at one-half the prices for any given size Tent. If higher walls than list specifies are wanted, add 6 per cent to list or each foot or fractional part of a foot of wall so added.

Prices are for Tents made in best manner, properly roped on ridges, gables, and every 9 feet of top. Additional roping will be charged for at 8 cents per foot of roping.

Size	Height of Wall	Height of Pole	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	10 Oz. Double Filling or 8 Oz. Army Duck	12 Oz. Double Filling or 10 Oz. Army Duck	12 Oz. Army or No. 10 Duck	15 Oz. Army or No. 8 Duck
21x30	5	11	$89.00	$101.00	$113.00	$127.50	$141.50	$173.50
21x35	5	11	104.50	118.50	132.50	149.50	166.00	204.00
21x40	5	11	115.00	130.50	146.00	164.50	182.50	224.50
21x49	5	11	136.00	154.50	173.00	194.50	216.50	265.50
24x28	6	13	105.50	120.00	134.50	151.00	168.00	206.50
24x35	6	13	125.00	142.00	159.00	179.00	199.00	244.00
24x42	6	13	144.50	164.00	183.50	206.50	229.50	282.00
24x51	6	13	169.50	192.50	215.50	242.50	269.50	331.00
24x60	6	13	195.00	221.50	248.00	279.00	310.00	381.00
24x65	6	13	207.50	236.00	264.50	297.50	330.50	406.00
30x37	6	15	160.00	182.00	204.00	229.50	255.00	313.00
30x42	6	15	175.00	199.00	223.00	250.50	278.50	342.50
30x47	6	15	189.50	215.50	241.50	271.50	301.50	370.50
30x51	6	15	204.00	232.00	260.00	292.50	325.00	399.00
30x56	6	15	219.00	249.00	279.00	313.50	348.50	428.50
30x60	6	15	233.50	265.50	297.50	334.50	371.50	456.50
30x65	6	15	248.50	282.50	316.50	356.00	395.50	486.00
30x70	6	15	263.00	299.00	335.00	376.50	418.50	514.50

We recommend and always insert an Asbestos Stove Pipe Ring—which is noiseless and can be rolled up without injury—in the rear end wall. Extra for same, $3.00.

All Tents are made with one door as illustrated. For an extra door, extra, $1.50.

Sod Cloths 9 inches wide are attached to bottom of wall of Tents to keep out insects, etc., at 6 cents per lineal foot.

If Rope Ridge is wanted—without poles—same will be furnished without an additional charge.

CAMPING TENTS

With Portable Walls and Partitions. Complete with Poles, Stakes, Guys and Two Partitions

MACHINE SEWED

For "Camping" this style of Tent will be found desirable. By raising the end walls, awnings can be formed, providing a space which can be used for cooking. Side walls are detachable at corners, so they can be rolled up and tied to the eaves. Two partitions are furnished, which can be quickly changed to lessen or increase the size of rooms. If tents with higher walls than listed are required, add 5 per cent to list for each foot or fractional part of a foot of wall so added.

Size	Height of Wall	Height of Center Poles	10 Oz. Double Filling or 8 Oz. Army Duck	12 Oz. Double Filling or 10 Oz. Army Duck	12 Oz. Army or No. 10 Duck
12 x14	6	11	$51.00	$57.50	$63.50
12 x16½	6	11	56.00	63.00	70.00
12 x18½	6	11	61.50	69.50	77.00
12 x21	6	11	66.50	75.00	83.50
12 x24	6	11	72.00	81.50	90.50
12 x28	6	11	82.50	92.50	103.00
12 x30	6	11	88.00	99.00	110.00
14 x16½	6	12	65.50	73.50	82.00
14 x18½	6	12	69.50	78.00	87.00
14 x21½	6	12	75.00	84.50	94.00
14 x23½	6	12	80.50	90.50	101.00
14 x28	6	12	92.00	103.50	115.00
14 x30	6	12	97.50	109.50	122.00
16½x18½	6	13	75.50	85.00	94.50
16½x21½	6	13	85.00	96.00	106.50
16½x23½	6	13	91.50	102.50	114.00
16½x28	6	13	103.50	116.50	129.50
16½x30	6	13	110.50	124.00	138.00

LUMBERMEN'S TENTS

COMPLETE WITH POLES, STAKES, ETC.

Machine Sewed

Size	Height of Poles	8 oz. Single Filling Duck	10 oz. Single Filling Duck	10 oz. Double Filling or 8 oz. Army Duck	12 oz. Double Filling or 10 oz. Army Duck
9x 9	7	$8.75	$10.50	$12.25	$14.00
9x12	7	10.25	12.30	14.35	16.40
9x14	7	11.85	14.20	16.50	18.90
9x16½	7	13.50	16.20	18.90	21.60
9x19	7	15.00	18.00	21.00	24.00
9x21	7	16.60	19.90	23.20	26.50
9x23½	7	18.25	21.90	25.55	29.20

"A," OR WEDGE TENTS

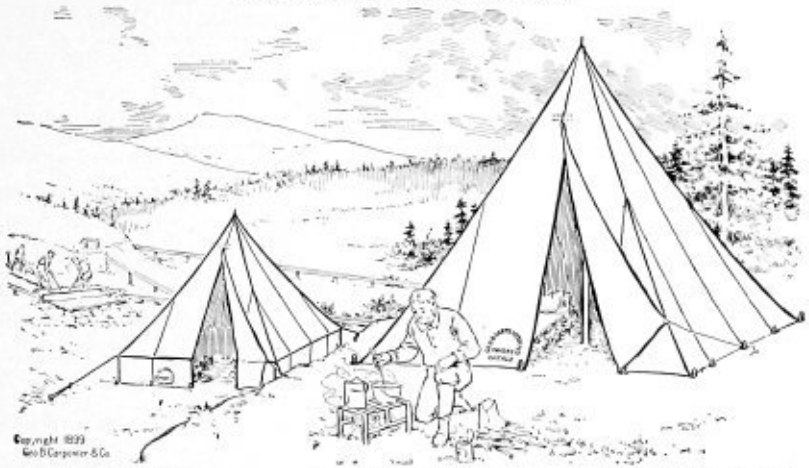
COMPLETE WITH POLES, STAKES, ETC., OR WITH "ROPE RIDGE" (as per cut)

Machine Sewed

Size	Height	8 oz. Single Filling Duck	10 oz. Single Filling Duck	12 oz. Duck Double and Twisted Filling
5 x 7	6	$5.00	$5.80	$7.55
7 x 7	7	6.30	7.35	9.70
7 x 9	7	7.55	8.85	11.70
9 x 9	7	8.35	9.85	13.05
9½x12	7½	10.30	12.10	16.10
12 x14	9	14.80	17.45	23.30

MINERS' TENTS

Complete with Pole, Stakes, etc.

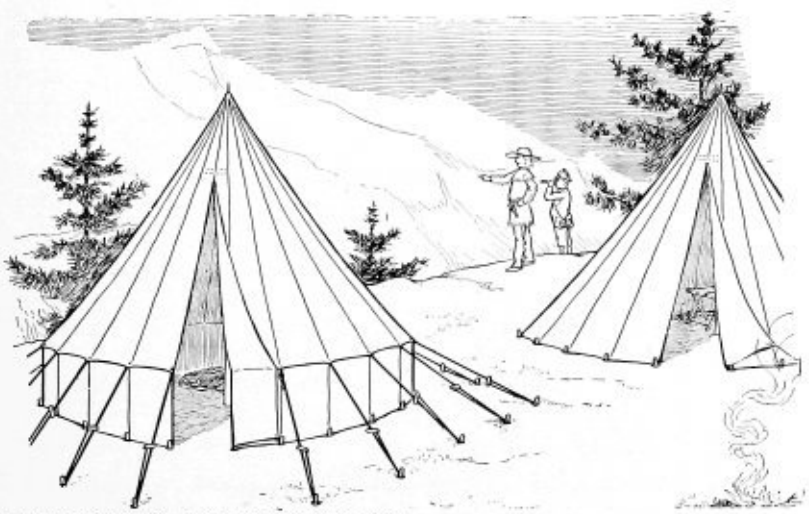


MACHINE SEWED

Size	Height	Without Wall: 8 Oz. Single Filling Duck	Without Wall: 10 Oz. Single Filling Duck	Without Wall: 12 Oz. Double and Twisted Filling Duck	With 2½ Foot Wall: Size	With 2½ Foot Wall: Height	With 2½ Foot Wall: 8 Oz. Single Filling Duck	With 2½ Foot Wall: 10 Oz. Single Filling Duck	With 2½ Foot Wall: 12 Oz. Double and Twisted Filling Duck
7 x 7	7	$4.40	$5.05	$7.00	7 x 7	7	$6.40	$7.25	$9.75
9 x 9	8	6.60	7.60	10.55	9 x 9	8	9.25	10.60	14.25
12 x 12	9	10.05	11.55	16.00	12 x 12	9	13.00	15.00	20.25

SIBLEY TENTS

Complete with Pole, Stakes, etc.



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MACHINE SEWED

Size	Height	Without Wall: 8 Oz. Single Filling Duck	Without Wall: 10 Oz. Single Filling Duck	Without Wall: 12 Oz. Double and Twisted Filling Duck	With 2½ Foot Wall: Size	With 2½ Foot Wall: Height	With 2½ Foot Wall: 8 Oz. Single Filling Duck	With 2½ Foot Wall: 10 Oz. Single Filling Duck	With 2½ Foot Wall: 12 Oz. Double and Twisted Filling Duck
10	8	$8.25	$9.50	$13.00	10	8	$11.25	$12.75	$17.75
12	9	10.50	12.00	16.75	12	9	14.00	16.00	22.00
14	10	13.25	15.25	21.00	14	10	16.75	19.00	26.25
16	11	17.75	20.25	28.00	16	11	22.00	25.00	34.75
					20	13	32.00	37.25	51.50

REFRESHMENT TENTS

Complete with Poles, Stakes, Guys and Keys

If higher walls than list specifies are wanted, add 5 per cent to list for each foot or fractional part of a wall so added. Prices are for White Duck. If desired, we will furnish made of Striped Duck at prices in fair proportion to above, based on the quality of the goods.

MACHINE SEWED

With One Side Wall Detachable

Size	Height of Wall	Height of Center	With Wall: 8 Ounce Duck, Single Filling	With Wall: 10 Ounce Duck, Single Filling	With Wall: 12 Ounce Double Filling Top, 8 Ounce Single Filling Wall	Without Wall: 8 Ounce Duck, Single Filling	Without Wall: 10 Ounce Duck, Single Filling	Without Wall: 12 Ounce Duck, Double and Twisted Filling
9x14	6	10	$22.35	$25.40	$26.60	$12.90	$14.00	$17.15
9x16½	6	10	25.00	28.40	30.20	14.70	15.95	19.85
9x19	6	10	27.75	31.50	33.60	16.55	17.95	22.40
12x19	6	11	30.60	34.90	38.00	18.50	20.30	25.90
12x21½	6	11	36.80	41.90	45.90	22.80	25.00	31.95
14x21½	6	12	37.55	42.90	47.60	23.60	26.05	33.65
14x23½	6	12	46.30	53.00	59.60	29.60	32.85	42.85

GOLF TENTS

Complete with Poles, Stakes, Guys, etc.

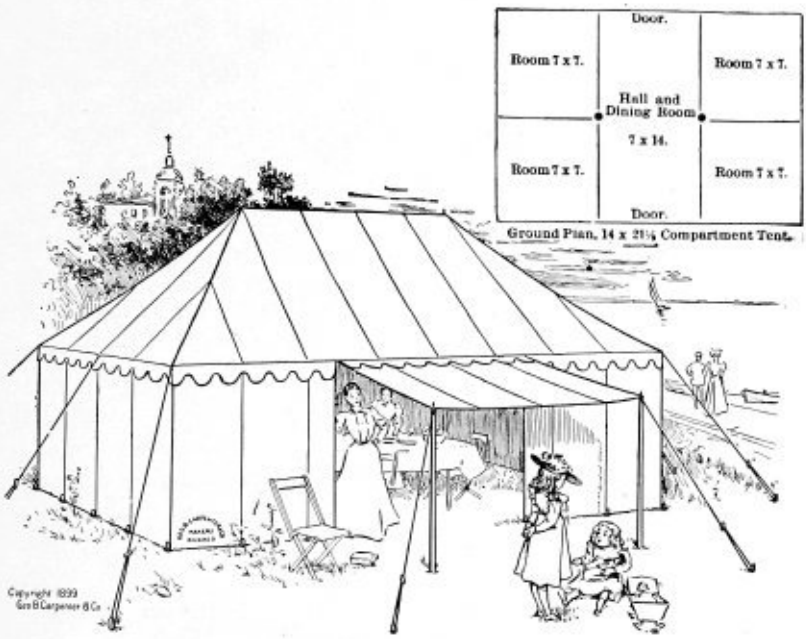
Are made in best possible manner, of the better grades of white duck, properly roped and strengthened. Samples of stripes on application.

MACHINE SEWED

Size	Perpendicular	10 Oz. Double Filling or 8 Oz. Army Duck	12 Oz. Double Filling or 10 Oz. Army Duck	12 Oz. Army or Fancy Stripe
7 x12	3	$10.00	$11.50	$13.00
7 x14	3	11.00	12.50	14.50
9 x14	4	14.50	16.50	18.50
9 x16½	4	17.50	20.00	23.00
9 x19	4	20.00	23.00	26.00
12 x19	5	26.00	30.00	34.00
12 x21½	5	28.50	33.00	37.00
12 x23½	5	32.00	36.50	41.50
14 x21½	6	32.50	37.00	42.00
14 x23½	6	34.50	40.00	45.00
16½x23½	7	45.50	52.00	58.00
16½x26	7	49.00	56.00	62.50
16½x28	7	53.50	61.00	68.50
19 x28	8	57.50	65.50	73.50
19 x33	8	62.50	71.50	80.00

FAMILY COMPARTMENT TENTS

Complete with Poles, Stakes, Guys, Partitions, etc.



MACHINE SEWED

Flies without poles at two-thirds the price of tent.

The awning shown above is part of the wall, on either or both sides of the Tent, raised to give agreeable shade and free circulation of air. When desired, these can be lowered and secured as balance of the wall. The partitions are of sheeting, same height as the wall, attached to cords stretched from center poles to sides and ends. If higher walls than list specifies are required, add 5 per cent to list for each foot or fractional part of a foot of wall so added

Size	Height of Wall	Height of Center Pole	Bedrooms	Dining-room	10 ounce Double Filling or 8 ounce Army Duck	12 ounce Double Filling or 10 ounce Army Duck	12 ounce Army Duck Top, and 10 ounce Army Duck Wall
9 x16½	6	10	2–4¾x 9	9x 7	$45.50	$51.50	$54.25
9 x19	6	10	2–4¾x 9	9x 9½	49.50	56.50	59.50
12 x19	6	11	2–5¾x12	12x 7	58.50	66.50	70.50
12 x21½	6	11	4–6 x 6	12x 9	63.50	72.50	77.00
14 x21½	6	12	4–7 x 7	14x 7	70.00	79.50	84.50
14 x23½	6	12	4–7 x 7	14x10	74.50	84.50	90.00
16½x23½	6	13	4–8 x 8¼	16x 7	84.50	96.50	102.50
16½x26	6	13	4–8 x 8¼	16x 9½	91.00	103.00	110.00
16½x28	6	13	4–8¼x 8	16x11½	97.50	111.00	118.50

SQUARE HIP ROOF TENTS

COMPLETE WITH POLES, STAKES, GUYS, ETC.

These Tents are made in best manner, properly roped where strength is required. Add 5 per cent for each additional foot or fractional part of a foot of wall, if higher walls than are listed are required. We can furnish with regular door if desired.

Flies without poles at two-thirds the price of the tent.

Machine Sewed

Size	Height of Wall	Height of Center Pole	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	10 Oz. Double Filling, or 8 Oz. Army Duck	12 Oz. Double Filling, or 10 Oz. Army Duck	12 Oz. Army or No. 10 Duck	15 Oz. Army or No. 8 Duck
6 x 6	5	7	$9.00	$10.50	$12.00	$14.00	$15.50	$20.00
7 x 7	6	8	13.50	15.50	18.00	20.50	23.50	29.50
9½ x 9½	6	9	18.50	22.00	25.50	29.00	33.00	42.00
12 x 12	6	10	27.50	32.00	36.50	41.50	46.50	58.50
14 x 14	6	11	36.00	42.00	47.50	54.50	61.50	76.00
16½ x 16½	6	12	45.00	52.50	59.50	68.00	76.00	95.00
19 x 19	6	13	53.50	62.00	70.50	80.50	90.00	113.00
21 x 21	6	13	76.00	86.50	97.00	109.00	121.00	149.00
23½ x 23½	6	14	89.50	101.50	113.50	128.00	142.00	174.50
26 x 26	6	15	103.00	117.00	131.00	147.50	164.00	201.00
28 x 28	6	15	115.00	130.50	146.00	164.50	182.50	224.50
30 x 30	6	16	129.00	146.50	164.00	184.50	205.00	252.00
33 x 33	6	17	146.00	166.00	186.00	209.00	232.50	285.50

OCTAGON GARDEN TENTS

COMPLETE WITH POLES, STAKES, GUYS, ETC.

If higher walls than those listed are wanted, add 5 per cent for each foot or fractional part thereof.

Machine Sewed

Diameter	Wall	Pole	8 Oz. Double Filling Duck	10 Oz. Double Filling or 8 Oz. Army Duck	10 Oz. Army Duck Top, with 8 Oz. Double Filling Wall
13	6	10	$33.50	$37.00	$37.50
17½	6	11	48.50	54.00	55.00
22	6	13	65.00	73.00	76.00

OBLONG TENTS, SQUARE ENDS

Complete with Poles, Stakes, Guys, etc.

MACHINE SEWED

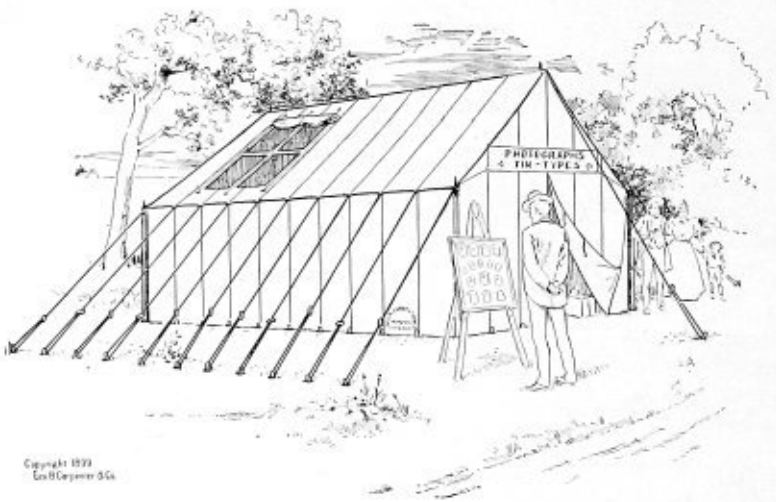
These prices are for Tents made in the very best manner, thoroughly roped where strength is required.

If higher walls than list specifies are wanted, add 5 per cent to list for each additional foot or fractional part of a foot of wall so added.

Size	Height of Wall	Height of Poles	10 Oz. Dbl. Filling, or 8 Oz. Army Duck	12 Oz. Dbl. Filling, or 10 Oz. Army Duck	12 Oz. Army, or No. 10 Duck	15 Oz. Army, or No. 8 Duck	Size	Height of Wall	Height of Poles	10 Oz. Dbl. Filling, or 8 Oz. Army Duck	12 Oz. Dbl. Filling, or 10 Oz. Army Duck	12 Oz. Army, or No. 10 Duck	15 Oz. Army, or No. 8 Duck
7 x12	5	8	$24.00	$27.50	$31.00	$39.50	28x42	7	16	$225.50	$254.00	$282.00	$346.50
7 x14	5	8	26.50	30.50	35.00	44.00	28x47	7	16	245.50	276.00	306.50	376.50
9 x14	6	10	34.50	39.50	45.00	57.00	28x51	7	16	265.50	298.50	332.00	407.50
9 x16½	6	10	40.00	46.00	52.00	66.00	28x56	7	16	285.00	320.50	356.50	437.50
9 x19	6	10	43.50	50.50	57.00	72.00	33x38	7	18	248.50	279.50	311.00	382.00
12 x19	6	11	52.00	60.00	68.00	86.00	33x42	7	18	268.00	302.00	335.50	412.00
12 x21½	6	11	56.50	65.00	74.00	93.50	33x47	7	18	292.50	329.00	365.50	449.00
12 x23½	6	11	61.50	71.00	80.50	102.00	33x52	7	18	316.50	356.00	395.50	486.00
14 x21½	6	12	62.00	71.50	81.00	102.50	33x56	7	18	342.00	385.00	427.50	525.50
14 x23½	6	12	66.00	76.50	86.50	109.50	33x60	7	18	365.00	411.00	456.50	560.50
16½x23½	6	13	82.00	93.50	105.00	131.00	37x47	7	19	308.50	347.00	385.50	474.00
16½x26	6	13	88.00	100.50	112.50	141.00	37x52	7	19	332.50	374.00	416.00	511.00
16½x28	6	13	94.50	107.50	121.00	151.00	37x56	7	19	356.50	401.50	446.00	548.00
19 x28	6	14	100.50	114.50	128.50	161.00	37x60	7	19	385.50	433.50	481.50	591.50
19 x33	6	14	107.50	122.50	137.50	172.00	37x65	7	19	405.50	456.00	507.00	622.50
23½x28	7	15	147.50	165.50	184.00	226.00	42x51	7	20	371.50	417.50	464.00	570.00
23½x33	7	15	163.50	184.00	204.50	251.00	42x56	7	20	397.00	446.50	496.50	609.50
23½x38	7	15	180.00	202.00	224.50	276.00	42x60	7	20	425.00	478.00	531.50	652.50
23½x42	7	15	197.00	222.00	246.50	302.50	42x65	7	20	447.50	503.50	559.50	687.00
23½x47	7	15	220.00	247.50	275.00	338.00	42x70	7	20	479.00	538.50	598.50	735.00
23½x51	7	15	237.00	266.50	296.00	364.00	42x80	7	20	532.50	599.00	665.50	818.00
28x38	7	16	206.00	232.00	257.50	316.50	.....	....	...	.....	.....	.....	.....

PHOTOGRAPHERS' TENTS

Complete with Poles, Stakes, Guys and Keys



MACHINE SEWED

Prices are for Tents made in best manner, properly roped where strength is required. If higher walls than list specifies are wanted, add 5 per cent to list for each additional foot or fractional part of a foot of wall so added. If Dark Room and extra poles for same are wanted, add to the list for dark room 6x6 feet, $13.00; and for dark room 4½x4½ feet, $11.00. One skylight furnished with each tent; if more are wanted, add $3.00 for each to list.

Sizes	Height of Wall	Height of Center	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	10 Oz. Double Filling or 8 Oz. Army Duck	12 Oz. Double Filling or 10 Oz. Army Duck
12x14	6	11	$26.50	$31.00	$36.50	$41.50
12x16	6	11	29.50	33.00	39.50	45.00
12x18	6	11	32.00	37.50	45.00	51.00
12x21	6	11	36.00	41.50	49.00	56.00
12x24	6	11	40.00	46.00	54.00	62.00
12x28	6	11	46.00	53.00	63.00	71.00
12x30	6	11	49.50	57.00	67.00	76.00
14x16	6	12	33.00	39.00	47.00	53.00
14x18	6	12	35.50	41.50	49.50	56.50
14x21	6	12	40.00	46.00	55.50	62.00
14x24	6	12	43.50	50.50	60.00	68.00
14x28	6	12	49.50	57.50	68.00	78.00
14x30	6	12	53.50	62.00	73.50	83.00
16x18	6	13	39.00	45.50	54.50	62.00
16x21	6	13	44.00	51.50	61.00	69.50
16x24	6	13	48.00	56.00	66.50	75.50
16x28	6	13	54.50	63.50	75.50	85.50
16x30	6	13	58.50	68.00	81.00	91.50

PALMETTO LAWN TENTS

Complete with Poles, Stakes, etc.

MACHINE SEWED

PRICE LIST WITHOUT AWNING EXTENSION

Size of Base	Size of Top	Center Height	Side Height	Drill	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	Stripe
7x 7	2 ft. 4 in.	7½	6	$7.50	$8.75	$9.75	$11.00
8x 8	2 " 4 "	8	6½	8.75	10.00	11.25	12.75
9x 9	3 " 6 "	8½	7	10.75	12.75	14.25	16.00
10x10	3 " 6 "	9	7½	12.00	14.25	16.00	18.00

PRICE LIST WITH AWNING EXTENSION

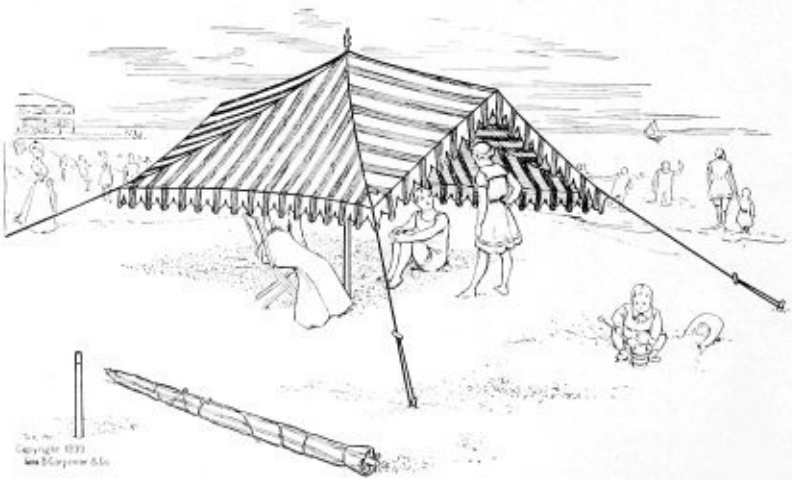
Size of Base	Size of Top	Center Height	Side Height	Drill	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	Stripe
7x 7	3 ft. 6 in.	8	6½	$11.00	$12.50	$13.75	$15.25
8x 8	3 " 6 "	8	6½	12.00	13.75	15.00	16.75
9x 9	4 " 8 "	9	7	14.00	16.25	18.00	20.25
10x10	4 " 8 "	10	8	16.00	18.50	20.75	23.25
12x12	5 " 6 "	10	8	18.00	21.00	23.50	26.50

AMAZON TENTS

Complete with Poles and Stakes

MACHINE SEWED

Size	Height of Wall	Height of Center Pole	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	10 Oz. Double Filling or 8 Oz. Army Duck	12 Oz. Double Filling or 10 Oz. Army Duck
7x 7	3	7	$13.50	$15.50	$17.75	$20.25
7x 9	3	7	16.25	19.00	21.50	24.50
7x12	3	7	20.25	23.50	26.50	30.25
9x 9	3	8	20.75	24.25	27.25	31.00
9x12	3	8	24.25	28.25	32.00	36.50
9x14	3	8	28.00	32.75	37.00	42.25
9x16½	3	8	31.75	37.00	42.00	48.00



BEACH TENT

Complete with Poles, Guy Ropes and Pins

Those desiring Tents for bathing and picnic parties, or outdoor games, will find the one illustrated peculiarly adapted to their requirements. It rolls up snugly, and the center pole being spliced makes it very convenient to carry. The feature of this Tent is the ease and quickness with which it can be put up and taken down. We make these of fancy colored striped duck.

10x10 feet, pole 9 feet, $14.00
12x12 " " 9 " 16.00

WATERPROOF SILKELENE TENTS

The silkelene used in these tents is an imported fabric made exclusively for us after our formula. It is the result of years of experiment to meet the growing demand for a light weight, waterproof material, to use in tents.

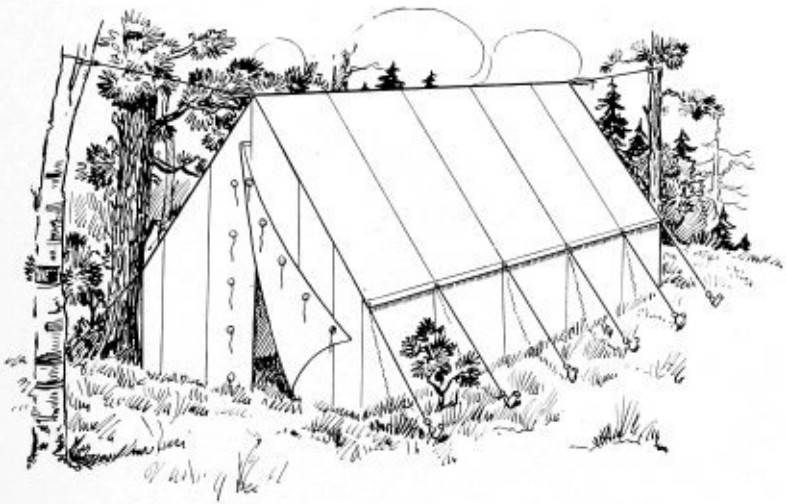
We confidently offer it as the best material on the market, combining strength, light weight, and being as absolute a waterproof material as can be manufactured.

These tents are all constructed and finished in the very best workmanship, all holes being hand worked, using galvanized steel rings in place of the brass grommets. The ridge is reinforced with a band, and rope is attached to this band by hand. All rope used throughout is of very best cotton. The stove-pipe holes are placed in rear wall unless ordered otherwise. All tents are made with sod cloths which are 9 inches wide and sewed to bottom of wall. If light weight is put on the sod cloths after tent is put up, it prevents insects from crawling in the tent. We can furnish these tents with canvas floors. Windows, covered with bobbinet netting, can be placed in tents. One door in each tent. Additional doors can be furnished if desired. Protection against flies, mosquitoes, etc., can be secured by using bobbinet netting which can be sewed across the entire front when ordered.

We always send tents with rope ridge and pins. If poles are wanted, they should be specified.

All tents are packed in waterproof bag.

WALL TENTS



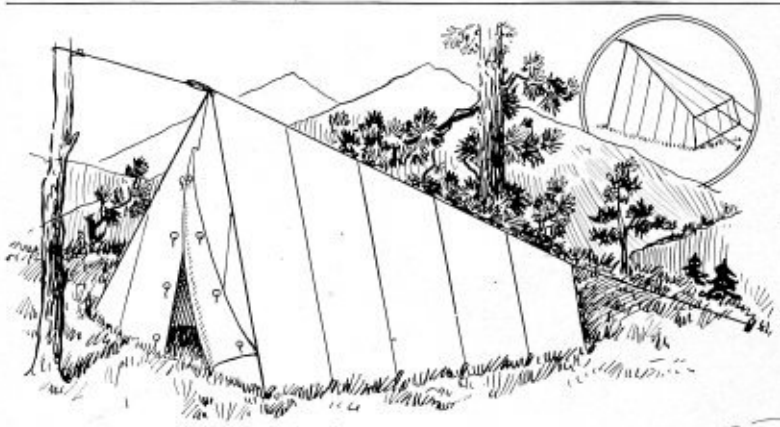
Size, Feet	Height in Feet		With Rope Ridge Each	Weight Lbs.	Extra for Bobbinet Netting Front	Extra for Spliced, Poles Pins
	Centre	Wall				
4½x 7½	6	1½	$27.50	8¼	$4.00	$2.75
6 x 7½	6½	2	32.50	9¾	5.25	3.00
7½x 7½	7	2	40.00	10¼	7.25	3.00
7½x 9½	7½	3	50.00	12¾	7.50	3.50
9½x 9½	7½	3	57.50	15	9.50	3.50
9½x11½	7½	3	63.00	17½	9.50	4.50
10 x12	8½	3½	78.50	21	12.00	5.00
12 x14	9	3½	92.50	25	12.50	5.50

Window covered with Bobbinet Netting and Silkelene Flap additional, $3.50. Asbestos Stove Pipe Collar additional, $3.00. Extra doors additional, $2.50.

WATERPROOF SILKELENE TENTS

AMAZON

Size feet	Height Feet Front	Height Feet Back	With Rope Ridge	Weight lbs.	Extra for Bobbinet Netting Front	Extra for Spliced Poles Pins
4½x 7½	5	1½	$25.00	6½	$8.00	$3.25
7½x 7½	5	1½	35.50	9¼	8.00	3.50
9½x 9½	7½	3	57.00	16	15.00	5.00
10 x12	7½	3	68.00	20	18.00	5.75

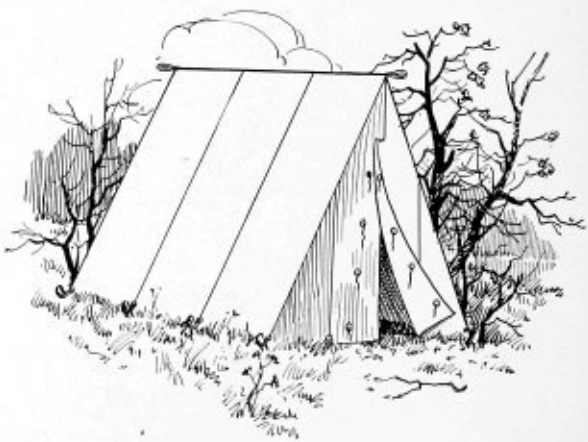


PROTEAN TENT

Size feet	Ht. Ft. Center	Ht. Ft. Wall	With Pole and Pins	Weight lbs.	Extra for Bobbinet Netting Front
5 x7½	6	1½	$22.00	5¾	$3.50
7½x7½	7	2	35.00	9½	5.25
7½x9½	7½	3	42.00	12	5.50
9½x9½	7½	3	45.00	13	7.50
9½x11½	7½	3	57.00	17½	8.00

WEDGE OR A TENT

Size feet	Height Centre feet	With Rope Ridge	Weight lbs.	Extra for Bobbinet Netting Front	Extra for Spliced Poles Pins
3 x7½	4	$15.50	5	$2.00	$2.50
4½x7½	5	23.00	6½	3.50	2.75
7½x7½	7	25.00	10	5.00	3.00
7½x9½	7	35.00	11¼	5.00	3.50
9½x9½	8	41.00	13½	7.25	4.00
10½x12	9	66.00	19	9.00	5.00



Windows covered with Bobbinet Netting and Silkelene Flaps additional..... $3.50
Asbestos Stove Pipe Collar, additional... 3.00
Extra Doors additional 2.50

SPECIAL WALL TENTS

KHAKI

Camping in Tents is at times, when Camp is in the open, made uncomfortable by the glare of the Sun; to overcome this we offer this material. It is the same as used by the U. S. Army.

TAN-TEXTOL

For an "All Summer Camp" where it is desired to have a Tent that is not only absolutely Water-proof but Mildew-proof as well, we recommend the Tan-Textol. Color is Tan.

WALL TENTS

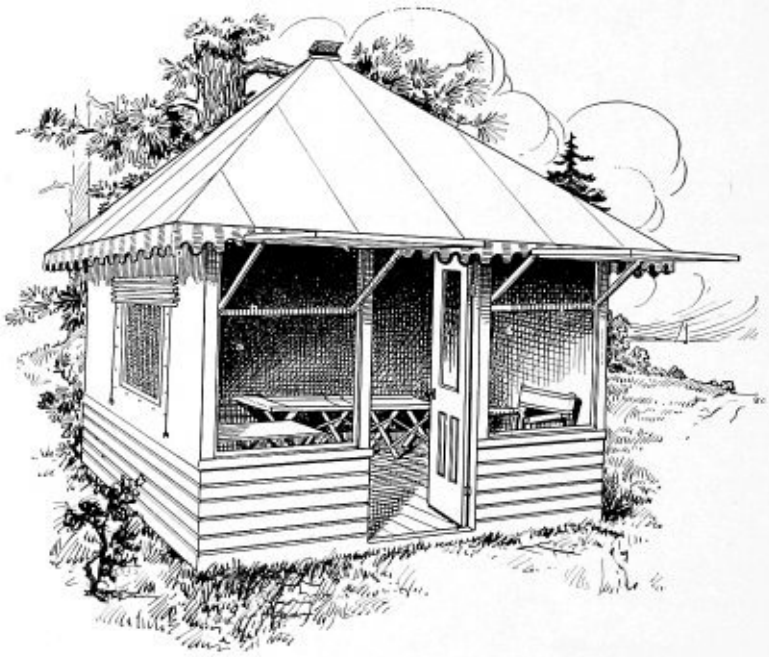
Complete with Poles, Stakes, Guys and Keys

Size	Height of Center	Height of Wall	8 Oz. Drill Khaki	10 Oz. Army Khaki	10 Oz. Army Tan-Textal
7 x 7	7	3	$12.25	$14.55	$17.50
7 x 9	7	3	14.60	17.40	20.90
9 x 9	7½	3	17.00	20.30	24.50
9½x12	7½	3	19.95	23.80	28.70
9½x14	7½	3	22.65	27.05	32.55
12 x12	8	3½	23.75	28.40	34.25
12 x14	8	3½	26.80	32.05	38.60
12 x16	8	3½	29.80	35.65	43.00
12 x18	8	3½	33.00	39.45	47.50
14 x14	9	4	32.10	38.45	46.45
14 x16	9	4	35.50	42.55	51.35
14 x18	9	4	39.45	47.30	57.10
14 x20	9	4	43.00	51.15	61.40
14 x24	9	4	48.10	57.25	68.75
16 x16	11	5	44.10	53.05	64.25
16 x18	11	5	48.25	58.00	70.20
16 x20	11	5	52.15	62.30	75.00
16 x24	11	5	59.05	70.40	84.65
16 x30	11	5	71.50	85.30	102.60
16 x35	11	5	80.20	95.60	114.95
18 x18	11	5	55.20	66.20	79.95
18 x20	11	5	59.70	71.10	85.45
18 x24	11	5	66.50	79.25	95.25
18 x30	11	5	79.95	95.35	114.65
18 x35	11	5	89.05	106.25	127.75

NOTE.—The above prices do not include flies. Regular flies for any size Tent will be furnished without poles at one half the price of the Tent quoted on application. If higher walls than list specifies are wanted, add 5% to list of each additional 6 inches of wall so added.

LA POINTE TENTS

Complete with Fly, Including Frame, Flooring, Doors, Hardware, etc.



This Tent is in reality a handsome cottage with Wood Door and Floor. It has, as illustrated, canvas windows as well as wire netting; the top is made of Heavy Duck with a fly, which projects 12 inches on all sides of roof of tent, and is arranged with an air space so as to insure complete ventilation and equable temperature.

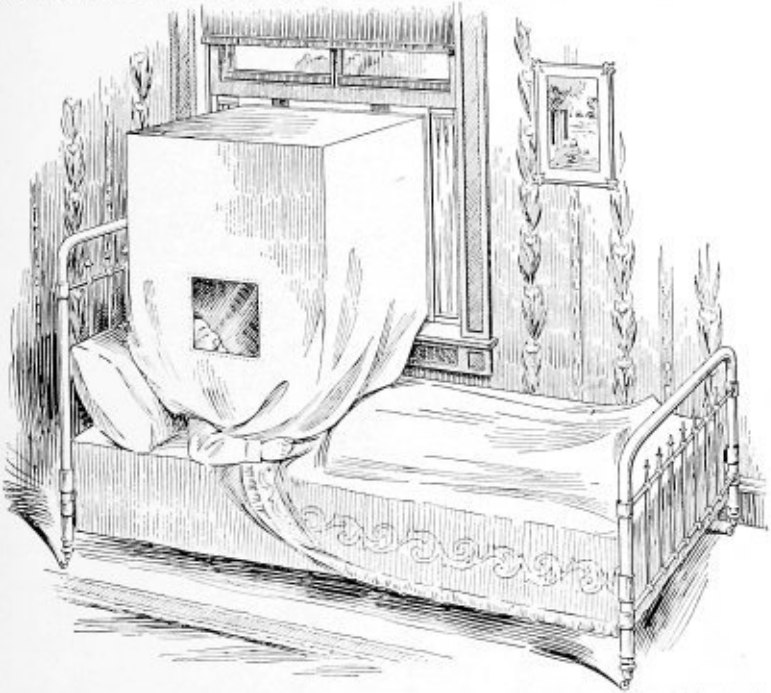
It is especially useful for invalids suffering from pulmonary diseases, as well as for campers and others, who wish to make a more permanent home than is possible with the other style of tents. It is indorsed and in service at numerous institutions for the cure of pulmonary diseases.

TOP AND FLY, 14 OZ. DUCK. WALLS, 12 OZ. DUCK

Size of Tent, 10x12 ft., 10¼ ft. center, 6 ft. walls; Fly, 12 ft. 9 in. x 15 ft.	$100.00
" " " 12x14 ft., 10 ft. center, 6 ft. walls; Fly, 14x16 ft.	125.00

THE LA POINTE ADJUSTABLE WINDOW TENT

This tent is unique in its construction, being a departure from all previous attempts in the building of tents. It is intended to, and does permit the user to have the benefit of fresh air, at the same time keeping the body warm while sleeping in your bedroom. It can be used either in connection with a bed or cot as desired.



It consists of an adjustable window frame, the center part screened, and both sides, which adjust to fit window, covered with a special closely woven duck.

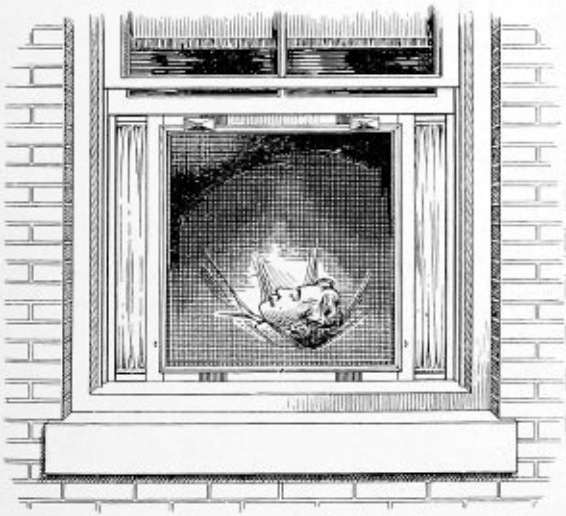
It will fit any window varying from 2 feet 10 inches to 4 feet 9 inches wide. It is easily and quickly adjusted. Any desired size to order at special price.

This illustration shows tent used in connection with a bed. It has a transparent window 10 inches square permitting occupant to see into the room.

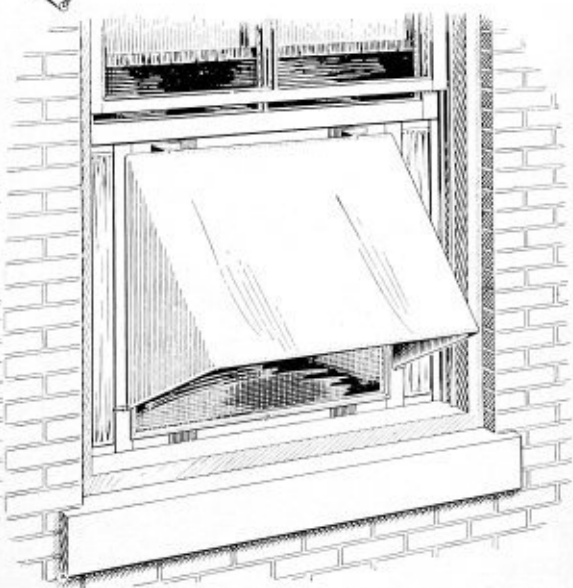
The opening is fitted with a tape which enables the user to fasten it snugly around the neck.

The pillow can be put in tent or left on bed as desired.

Dimensions of tent are 38 inches by 28 inches by 28 inches in height.



This illustration shows exterior view, screene center, adjustable duck covered sides without awning.



This illustration shows exterior with awning. The awning can be attached before Tent is placed in window; it is easily and quickly adjusted or removed.

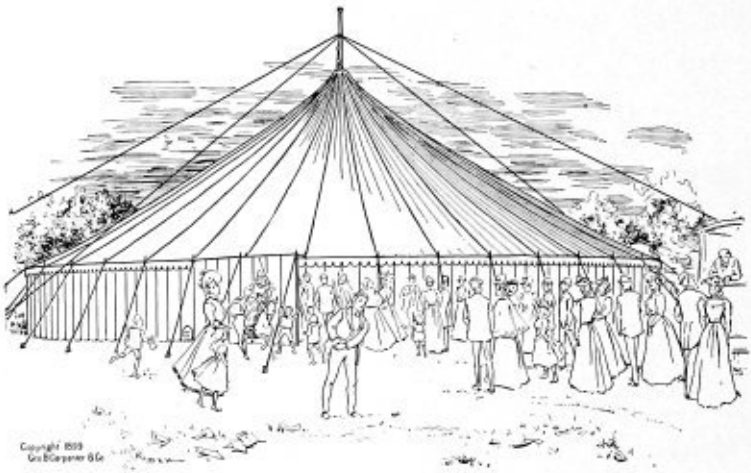
The awning not only protects occupant from rain and snow but acts as a wind-brake as well.

Tent when closed makes a package 34 in. by 30 in. by 2 in. thick. It is packed in a neat canvas bag.

Complete, Khaki duck.....each $12.00

ROUND TENTS

Complete with Poles, Stakes, Guys, etc.



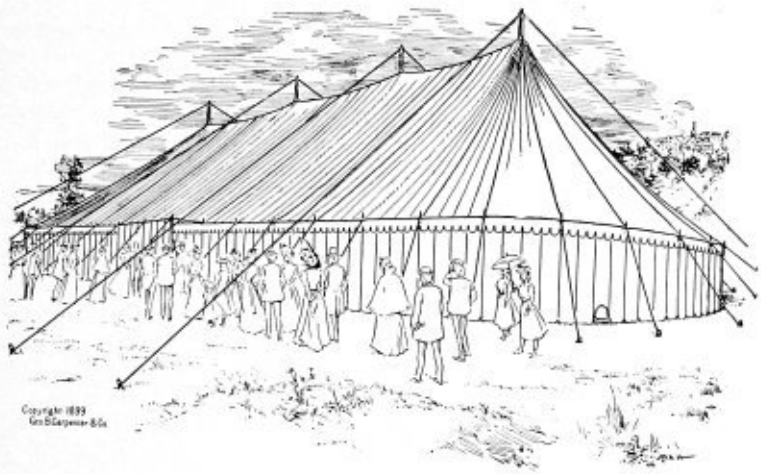
MACHINE SEWED

Prices are for Tents made in the best manner, thoroughly banded, roped and "stayed" where strength is required. If higher walls than list specifies are wanted, add 5% to list for each additional foot or fractional part of a foot of wall so added. In the larger sizes, price includes a bale ring and tackle for raising the top. Prices for larger sizes quoted upon application. All sizes up to and including 35 feet are furnished with push pole; larger sizes are furnished with bale rings.

Size Diameter	Wall	Pole	Each Lacing Extra	Standard Drill	6¼ Oz Tent Twill	8 Oz. Double Filling Duck	10 Oz. Double Filling or 8 Oz. Army Duck	10 Oz. Army Duck Top 8 Oz. Double Filling Duck Wall	12 Oz. Army Duck Top. 8 Oz. Double Filling Duck Wall
13	6	9¾	.....	$28.00	$31.50	$36.50	$41.00	$41.50	$44.00
17½	6	11	.....	41.50	46.00	53.00	60.00	61.00	65.50
22	6	12½	.....	56.50	62.50	72.00	81.50	84.00	90.00
26	6	13½	.....	73.00	81.50	93.50	105.50	109.50	118.00
31	6	14¾	.....	92.50	102.50	117.50	133.00	138.50	150.00
35	6	16	.....	113.50	126.00	144.50	163.00	171.00	185.00
40	6	17¼	$14.00	136.00	151.00	173.00	195.50	206.00	223.50
44	6	18½	15.00	161.50	178.50	205.00	231.00	244.50	266.00
48	6	19¾	17.00	188.50	208.50	239.00	269.50	286.50	311.50
52½	6	21	18.00	217.00	240.50	275.50	310.50	331.00	360.50

OBLONG ROUND END TENTS

Complete with Poles, Stakes, Guys, etc.



MACHINE SEWED

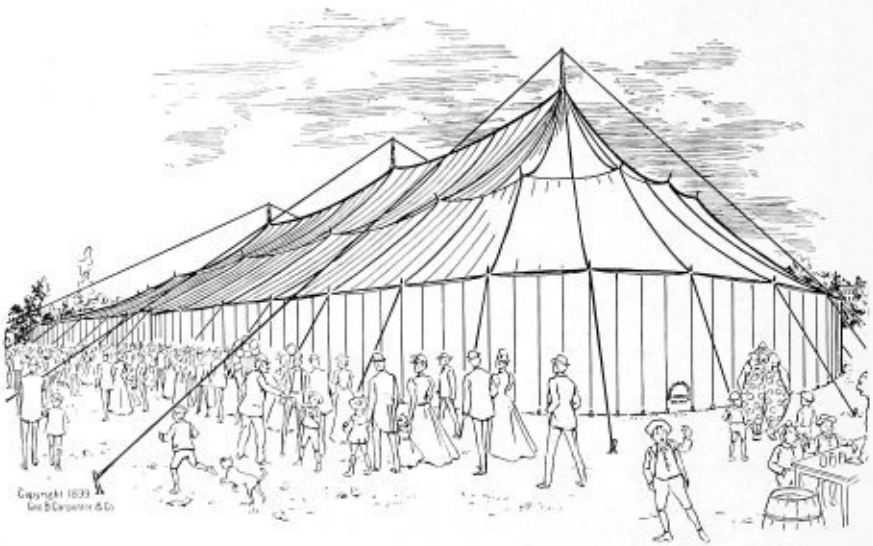
All sizes up to and including 40x68 feet are furnished with push poles; larger sizes are furnished with bail rings and half lacing.

NOTE.— Tents as above are made in the best possible manner, thoroughly roped, every three cloths, and properly "stayed" where strength is required. If higher walls than list specifies are wanted, add 5 per cent to list for each foot or fractional part of a foot of wall so added.

Size	Height of Wall	Height of Center Poles	Standard Drill	6½ Oz. Extra Tent Twill	8 Oz. Double Filling Duck	10 Oz. Double Filling or 8 Oz. U. S. Army Standard Duck	10 Oz. Army Duck Top 8 Oz. Double Filling Wall	12 Oz. Army Duck Top 8 Oz. Double Filling Wall
13 x21	6	9¾	$40.50	$45.00	$52.00	$59.00	$60.00	$64.00
13 x27	6	9¾	53.00	59.00	67.50	76.50	78.50	84.00
17½x24½	6	11	55.50	62.00	71.00	80.50	82.50	89.00
17½x31½	6	11	70.00	77.50	89.50	101.00	104.00	112.00
22 x29	6	12¼	72.50	81.00	93.00	105.00	108.50	117.00
22 x36	6	12¼	89.00	99.00	113.50	128.50	133.50	144.00
26 x33	6	13½	91.50	101.50	116.50	132.00	137.50	148.50
26 x40	6	13½	110.00	122.00	140.00	158.00	165.50	179.00
26 x47	6	13½	128.00	142.00	163.00	184.00	193.00	209.50
31 x38	6	14¾	112.50	125.00	143.50	162.00	170.00	184.00
31 x45	6	14¾	133.00	147.50	169.00	191.00	200.50	217.50
31 x52	6	14¾	153.00	170.00	195.00	220.00	231.50	251.50
35 x49	6	16	158.00	175.00	200.50	226.50	239.50	260.00
35 x56	6	16	180.50	200.00	229.00	258.00	273.50	297.50
35 x63	6	16	202.50	224.50	257.00	290.00	307.50	335.00
40 x54	6	17¼	185.00	204.50	234.50	264.50	280.50	305.50
40 x61	6	17¼	209.00	231.50	265.50	299.00	318.00	346.50
40 x68	6	17¼	233.50	258.50	296.00	333.50	355.50	387.00
44 x58	6	18½	214.00	237.00	271.50	305.50	340.00	369.50
44 x65	6	18½	240.00	266.00	304.50	343.00	366.00	399.00
44 x72	6	18½	266.50	295.00	337.50	380.50	406.50	443.50
48 x62	6	19¾	245.00	271.00	310.50	350.00	373.50	407.50
48 x69	6	19¾	273.50	302.50	346.00	390.00	417.00	455.00
48 x76	6	19¾	301.50	333.50	382.00	430.00	461.00	503.50
52½x66½	6	21	278.00	307.50	352.00	396.00	424.50	463.50
52½x73½	6	21	308.00	341.00	390.00	439.00	471.00	515.00
52½x80½	6	21	358.50	394.50	448.50	502.00	518.00	566.00

CIRCUS CANVASES

These Tents are made in large sizes only — 60 feet diameter and upward, with one or more middle pieces, to make them any desired length. They are furnished with quarter poles. Bands are placed at the top or ridge with quarter, rim and intermediate bands. Ropes are sewed in every two cloths, with ridge, quarter and rim ropes crossing them, making the strongest possible structure. The top is laced at each center pole, and at every third section. They are furnished with tackles, bail rings, center poles, side poles, stakes, and all necessary guys.



DIRECTIONS FOR SETTING UP TENT

The manner of setting up a Tent of this kind is as follows. For better guidance we give directions for setting up a 60 x 100-foot Tent.

First measure 100 feet on the ground and mark a distance of 30 feet from each end. Here either dig a small hole or drive a few stakes for a foothold for the center poles while they are being raised. Then drive three stakes for each center pole, and same number of stakes for each end piece of canvas, as per sketch, which we furnish with the Tent. Before raising center poles, insert bail rings from the bottom of pole and hook your tackle to the eye in center pole, then raise center poles and make fast the guy lines. The middle piece is then placed on the ground between the poles, and the end pieces brought up to it from each side. Next hook your tackle to bail ring and raise same a few feet from ground. Hook the head of canvas to bail ring and the middle piece to ends at the head. Lace canvas from both head and rim up to the long key, *i. e.*, long rope. Hoist canvas, put up wall poles and guy them. Next put up quarter poles, then drive stakes for rim and guy the canvas.

There being such a large range in sizes of these Tents we do not list prices, but will be pleased to quote any size desired upon receipt of specifications.

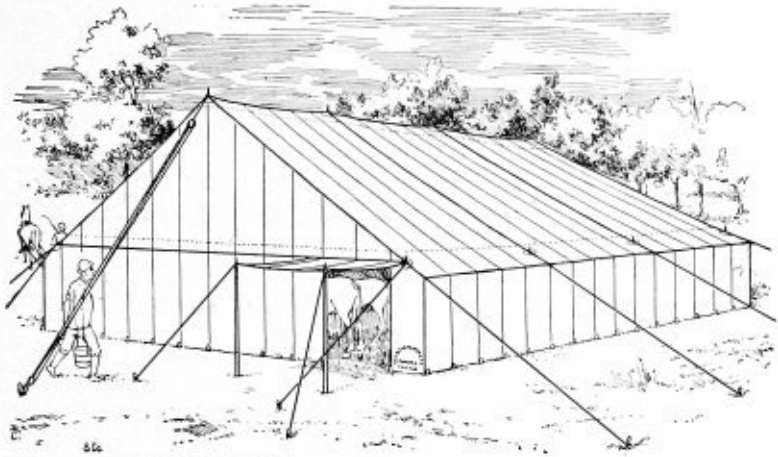
Marquee's quoted upon application.

STABLE TENTS

Complete with Poles, Stakes, Guys and Tackles for Setting Up

Stable Tents are thoroughly roped on ridges, eaves, gables, and every 9 feet of the top. Any additional roping required will be charged for at the rate of 8 cents per foot of roping list. If higher walls than list specifies are wanted, add 6% to list for each additional foot or fractional part of foot of wall so added.

Grain Mangers prices on application.

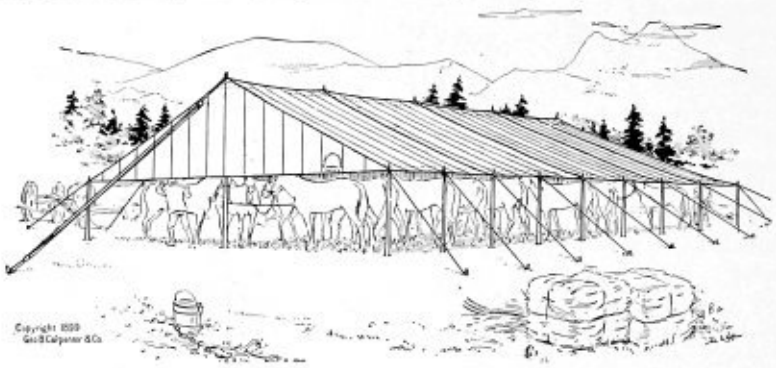


MACHINE SEWED

Size	Wall	Pole	10 Oz. Double Filling or 8 Oz. Army Duck	12 Oz. Double Filling or 10 Oz. Army Duck	12 Oz. Army or No. 10 Duck	15 Oz. Army or No. 8 Duck	Size	Wall	Pole	10 Oz. Double Filling or 8 Oz. Army Duck	12 Oz. Double Filling or 10 Oz. Army Duck	12 Oz. Army or No. 10 Duck	15 Oz. Army or No. 8 Duck
24x21	5	12	$104.00	$117.00	$130.00	$160.00	28x 35	5	13	$170.75	$192.25	$213.50	$262.25
24x24	5	12	112.00	126.00	140.00	172.00	28x 37	5	13	179.25	201.50	224.00	275.25
24x28	5	12	127.00	143.00	159.00	195.00	28x 42	5	13	196.50	221.25	245.75	302.00
24x33	5	12	142.00	160.00	178.00	218.50	28x 47	5	13	213.50	240.00	266.75	327.50
24x35	5	12	150.00	169.00	187.50	230.50	28x 51	5	13	230.25	259.00	287.75	353.50
24x37	5	12	157.50	177.00	196.50	241.50	28x 56	5	13	247.50	278.50	309.50	380.00
24x42	5	12	173.00	194.50	216.50	265.50	28x 60	5	13	265.00	298.00	331.00	406.75
24x47	5	12	188.50	212.50	236.00	290.00	28x 63	5	13	273.75	308.00	342.25	420.50
24x51	5	12	204.50	230.00	255.50	314.00	28x 65	5	13	281.75	317.00	352.00	433.00
24x56	5	12	219.50	247.00	274.50	337.00	28x 70	5	13	298.50	336.00	373.00	458.50
24x60	5	12	234.50	264.00	293.50	360.50	28x 72	5	13	307.50	346.00	384.50	472.00
24x63	5	12	242.00	272.00	302.50	371.50	28x 75	5	13	315.00	354.50	394.00	484.00
24x65	5	12	250.00	281.00	312.00	383.50	28x 82	5	13	341.00	383.50	426.50	524.00
24x70	5	12	265.00	298.00	331.00	407.00	28x 84	5	13	353.00	397.00	441.00	542.00
24x72	5	12	273.50	307.50	341.50	419.50	28x 91	5	13	375.00	422.00	469.00	576.00
24x75	5	12	280.50	315.50	350.50	431.00	28x 94	5	13	391.50	440.50	489.50	601.00
26x21	5	12½	111.50	125.50	139.50	171.00	28x100	5	13	416.50	469.00	521.00	640.00
26x24	5	12½	120.00	135.00	150.00	184.00	30x 21	5	14	130.00	146.00	162.50	199.50
26x28	5	12½	135.50	152.50	169.50	208.00	30x 24	5	14	139.00	156.00	173.50	213.50
26x33	5	12½	152.00	170.50	189.50	233.00	30x 28	5	14	161.50	181.50	201.50	247.50
26x35	5	12½	159.50	179.50	199.50	245.00	30x 33	5	14	176.00	198.00	220.00	270.00
26x37	5	12½	168.00	189.00	210.00	258.00	30x 35	5	14	184.00	207.50	230.50	283.00
26x42	5	12½	184.00	207.50	230.50	283.00	30x 37	5	14	193.00	217.50	241.50	296.50
26x47	5	12½	200.50	225.50	250.50	308.00	30x 42	5	14	211.00	237.50	264.00	324.00
26x51	5	12½	216.00	243.00	270.00	332.00	30x 47	5	14	229.00	257.50	286.50	351.50
26x56	5	12½	232.50	261.50	290.50	357.00	30x 51	5	14	247.00	278.00	308.50	379.50
26x60	5	12½	248.50	279.50	311.00	382.00	30x 56	5	14	265.50	298.50	332.00	407.50
26x63	5	12½	257.00	289.00	321.50	394.50	30x 60	5	14	283.50	319.00	354.00	435.00
26x65	5	12½	264.50	297.50	330.50	406.00	30x 63	5	14	292.50	329.00	365.50	449.00
26x70	5	12½	281.00	316.50	351.50	431.50	30x 65	5	14	301.50	339.00	376.50	462.50
26x72	5	12½	289.00	325.00	361.00	444.00	30x 70	5	14	320.00	359.50	400.00	491.00
26x75	5	12½	297.00	334.00	371.00	456.00	30x 72	5	14	328.00	369.00	410.00	504.00
26x82	5	12½	321.00	361.00	401.00	493.00	30x 75	5	14	337.50	380.00	422.00	518.50
26x84	5	12½	329.50	370.50	411.50	505.50	30x 82	5	14	364.00	409.50	455.00	559.00
26x91	5	12½	353.50	397.50	441.50	542.50	30x 84	5	14	373.00	419.50	466.00	573.00
28x21	5	13	119.75	134.75	149.75	184.00	30x 91	5	14	399.50	449.00	499.00	613.00
28x24	5	13	128.25	144.25	160.25	197.00	30x 94	5	14	418.00	470.00	522.00	641.50
28x28	5	13	145.00	163.25	181.25	222.75	30x100	5	14	445.00	501.00	556.50	683.50
28x33	5	13	163.00	183.25	203.75	250.25	.....	....	....	.....	.....	.....	.....

STABLE TENT ROOFS

With Gable Ends, but Without Walls. Complete with Poles, Stakes, Guys and Two Tackles for Setting up



MACHINE SEWED

These Tent Roofs are made in the best manner, properly roped on ridges, gables, and eaves, and every 9 feet of top.

Additional roping, if wanted, will be charged for at the rate of 8 cents per foot of roping.

Size	Perpendicular	10 Oz. Dbl. Filling or 8 Oz. Army Duck	12 Oz. Dbl. Filling or 10 Oz. Army Duck	12 Oz. Army or No. 10 Duck	15 Oz. Army or No. 8 Duck	Size	Perpendicular	10 Oz. Dbl. Filling or 8 Oz. Army Duck	12 Oz. Dbl. Filling or 10 Oz. Army Duck	12 Oz. Army or No. 10 Duck	15 Oz. Army or No. 8 Duck
24x21	7	$65.00	$73.50	$81.50	$100.00	28x 35	8	$117.00	$131.50	$146.50	$179.50
24x24	7	71.00	80.00	88.50	109.00	28x 37	8	123.00	138.50	154.50	189.00
24x28	7	82.00	92.00	102.50	126.00	28x 42	8	136.50	153.50	171.00	210.00
24x33	7	94.00	105.50	117.00	144.00	28x 47	8	148.00	169.00	187.50	228.50
24x35	7	99.00	111.50	124.00	152.00	28x 51	8	163.00	183.50	203.50	250.50
24x37	7	104.50	118.00	131.00	161.00	28x 56	8	176.50	198.50	220.50	271.00
24x42	7	117.00	131.00	145.50	179.00	28x 60	8	189.50	213.00	236.50	290.50
24x47	7	128.00	144.50	160.50	197.00	28x 63	8	196.00	220.50	245.00	301.00
24x51	7	139.50	157.00	174.50	214.00	28x 65	8	202.50	228.00	253.50	311.50
24x56	7	151.00	170.00	189.00	232.00	28x 70	8	215.50	242.50	269.50	331.00
24x60	7	162.50	182.50	203.00	249.50	28x 72	8	222.50	250.00	278.00	341.50
24x63	7	168.00	189.00	210.00	258.00	28x 75	8	229.00	257.50	286.50	351.50
24x65	7	174.00	196.00	217.50	267.50	28x 82	8	248.50	279.50	311.00	382.00
24x70	7	185.50	208.50	231.50	284.50	28x 84	8	255.50	287.50	319.00	392.00
24x72	7	191.50	215.50	239.50	294.00	28x 91	8	275.50	310.00	344.50	423.00
24x75	7	197.00	222.00	246.50	302.50	28x 94	8	288.00	324.00	360.00	442.00
26x21	7½	70.50	79.50	88.00	108.50	28x100	8	307.50	346.00	384.50	472.00
26x24	7½	76.50	86.50	96.50	118.00	30x 21	9	85.00	96.00	106.50	130.50
26x28	7½	88.50	99.50	110.50	136.00	30x 24	9	92.50	104.00	115.50	142.00
26x33	7½	101.00	113.50	126.00	155.00	30x 28	9	106.50	119.50	133.00	163.50
26x35	7½	107.00	120.50	133.50	164.50	30x 33	9	121.00	136.00	151.00	186.00
26x37	7½	113.00	127.50	141.50	173.50	30x 35	9	127.50	143.50	159.50	196.00
26x42	7½	125.50	141.00	157.00	192.50	30x 37	9	135.00	152.00	168.50	207.50
26x47	7½	138.00	155.00	172.00	211.00	30x 42	9	149.00	167.50	186.00	229.00
26x51	7½	150.00	169.00	187.50	230.50	30x 47	9	163.00	183.50	203.50	250.50
26x56	7½	162.50	182.50	203.00	249.50	30x 51	9	177.00	199.00	221.00	272.00
26x60	7½	174.00	196.00	217.50	267.50	30x 56	9	191.50	215.50	239.50	294.00
26x63	7½	181.00	203.50	226.00	278.00	30x 60	9	205.50	231.00	257.00	315.50
26x65	7½	186.50	210.00	233.00	286.50	30x 63	9	213.00	239.50	266.00	327.00
26x70	7½	199.50	224.50	249.00	306.00	30x 65	9	219.50	247.00	274.50	337.00
26x72	7½	205.00	230.50	256.00	315.00	30x 70	9	234.00	263.50	292.50	359.50
26x75	7½	211.00	237.50	264.00	324.00	30x 72	9	241.00	271.00	301.00	370.00
26x82	7½	229.50	258.50	287.00	352.50	30x 75	9	248.00	279.00	310.00	381.00
26x84	7½	236.00	265.00	294.50	362.00	30x 82	9	269.00	302.50	336.00	413.00
26x91	7½	254.00	286.00	318.00	390.50	30x 84	9	276.00	310.50	345.00	424.00
28x21	8	77.50	87.00	96.50	118.50	30x 91	9	297.00	334.00	371.00	456.00
28x24	8	84.00	94.50	105.00	129.00	30x 94	9	311.50	350.50	389.00	478.00
28x28	8	97.00	109.00	121.00	149.00	30x100	9	332.50	374.00	416.00	511.00
28x33	8	100.50	124.00	138.00	169.50	.....	.	.....	.....	.....	.....

UNITED STATES ARMY TENTS

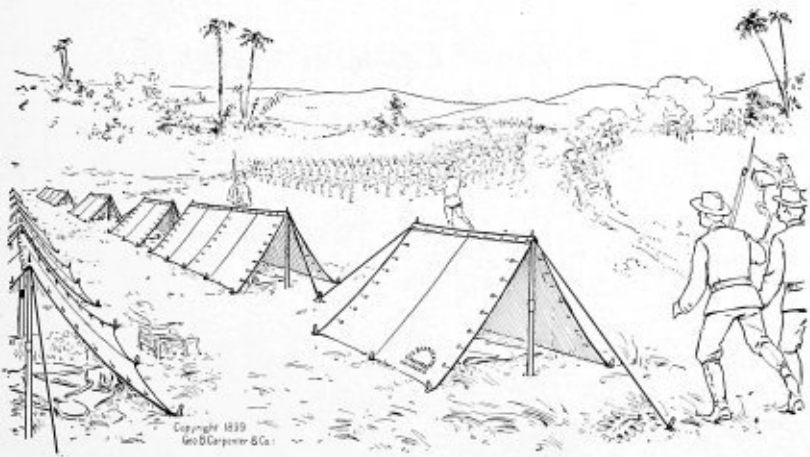
U. S.

THOS. J. WHEEDEN,
U. S. INSPECTOR.

GEO B. CARPENTER & CO.,
MAKERS CHICAGO.

Showing manner of stamping government tents.

U. S. ARMY SHELTER TENTS



MACHINE MADE

These **Tents** were adopted by the war department as a temporary shelter for troops, each soldier carrying one section, and the old soldiers know them as "Dog Tents." They are made in two sections, each consisting of one side and one end, buttoned at the top and are spliced.

Five feet three inches long, by 3 feet 6 inches wide, by 3 feet 9 inches center height, 6½ oz. white special **yacht twill** $3.50

Price **includes** poles, pins and guys.

U. S. ARMY WALL TENTS

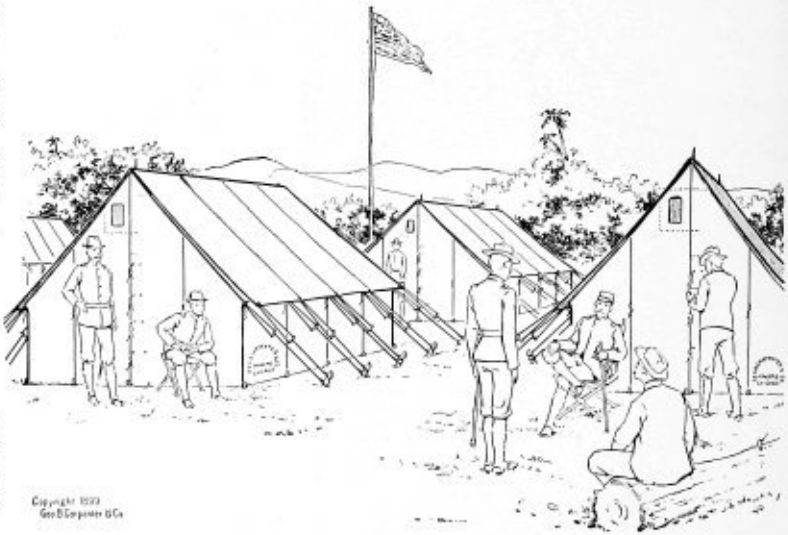
WITH FLY

These Tents are furnished with a fly. They are the regulation Camp Tents for officers.

Complete, with poles, stakes, guys, etc. Dimensions are 9 feet long, 9 feet wide, 8½ feet high, with 3 foot 9-inch wall. Tent, 12 oz. army duck, with 8 oz. army duck sod cloth. Fly 10 oz. army duck.

	Machine Sewed Hand Finished	Hand Stitched and Hand Finished
White Army Duck	$28.00	$36.00
Drab Army Duck	30.00	38.00

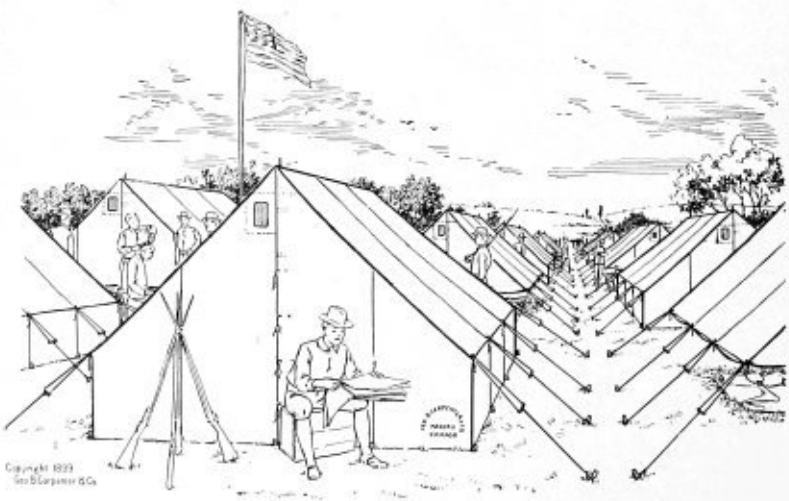
Prices include fly. If no fly is wanted, deduct 33⅓ per cent from list.



U. S. ARMY COMMON TENTS

These Tents are made in two different styles: with closed corners and with open corners. They are the regulation Camp Tents for soldiers.

Complete with poles, stakes, guys, etc. Dimensions are 8 feet 4 inches long, by 6 feet 11 inches wide, by 6 feet 10 inches high, with 2-foot wall. Tent, 10 oz. army duck, with 8 oz. duck sod cloth.



WITH CLOSED CORNERS

	Machine Sewed Hand Finished	Hand Stitched and Hand Finished
White Army Duck	$16.00	$21.00
Drab Army Duck.....	17.50	22.50

WITH LACED CORNERS

	Machine Sewed Hand Finished	Hand Stitched and Hand Finished
White Army Duck	$20.00	$25.00
Drab Army Duck	21.50	26.50

U. S. ARMY HOSPITAL TENTS

With Fly

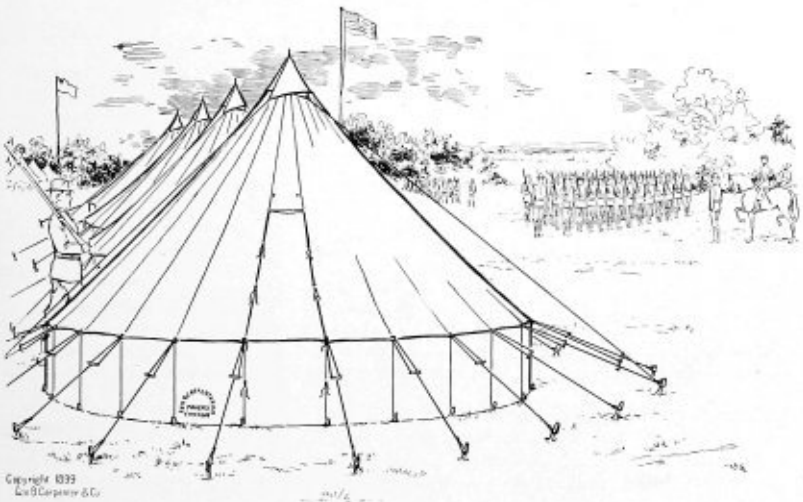
These are the regulation Hospital Tents and are also used for regimental headquarters.

Complete with poles, stakes, and guys. Dimensions are: 14 feet long, 14 feet wide, 11 feet high, with 4½ foot wall. Tent, 12 oz. army duck with 8 oz. army duck sod cloth. Fly, 10 oz. army duck.

	Machine Sewed Hand Finished	Hand Stitched and Hand Finished
White Army Duck	$55.50	$70.50
Drab " "	60.00	75.00

NOTE.—Prices include fly. If no fly is wanted, deduct 33⅓ per cent from list.

U. S. ARMY CONICAL WALL TENTS



Are the latest style of Army Camp Tents, being an improvement on the Sibley. The advantages of these tents lie mainly in the fact that they will house a greater number of soldiers than any of the other styles.

Complete with pole, tripod, stakes, guys, etc. Dimensions of tent are: 16 feet 5 inches diameter; 10 feet high; 3 foot wall. Tent, 12 oz. army duck with 8 oz. army duck sod cloth.

	Machine Sewed Hand Finished	Hand Stitched and Hand Finished
White Army Duck	$40.00	$52.00
Drab " "	43.00	55.00

We furnish for use in these Tents the regulation cone shaped stove and necessary pipe for $10.00.

STOCKMEN'S BED SHEETS

MADE FROM ONE WIDTH BEST WHITE DUCK

With Snaps and Rings or Eyelets, as may be ordered

Sizes not Named in List, Prices in Proportion

Size in Feet...	6x12	6x14	6x15	6x18	7x12	7x14	7x15	7x16	7x18	8x12	8x14	8x15	8x16	8x18
No. 10 or 13 oz.....	$4.50	$5.20	$5.60	$6.65	$5.25	$6.00	$6.45	$6.90	$7.60	$6.50	$7.50	$8.05	$8.60	$9.60
No. 8 or 15 oz.....	5.45	6.30	6.75	8.05	6.25	7.20	7.75	8.30	9.15	7.85	9.00	9.70	10.40	11.60
No. 6 or 18 oz.....	5.85	6.80	7.25	8.65	6.90	7.95	8.55	9.15	10.10	8.55	9.90	10.60	11.35	12.70
No. 4 or 20 oz.....	6.80	7.85	8.45	10.10	7.75	9.00	9.60	10.25	11.40	9.60	11.10	11.90	12.70	14.20

THE McCALL TENT

For Prospectors, Miners, Ranchmen, Cowboys, and Hunters

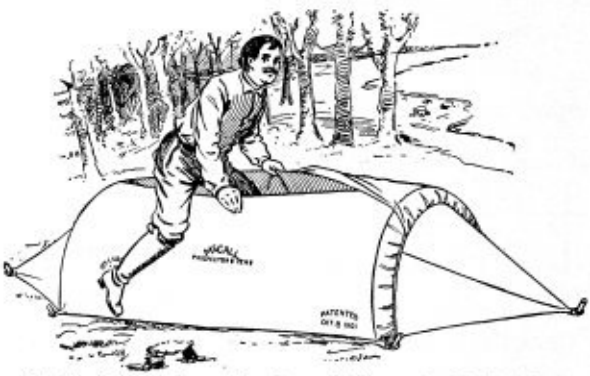


Fig. 1. Getting in on the Ground Floor of a McCall Tent

Built by a Cowman who knows men's abhorrence of trappery, detachments, etc.
Has a heavy waterproof canvas floor.
Has no poles. Can be set up complete in a minute.
Requires no guy ropes, trees, or other help — is complete in itself.

Fig. 3. Packed for Shipment

Is made in one piece. No detached parts.
Weighs but 12 pounds complete.
Has heavy umbrella ribs that are bent and interlock at the top when the tent is set up.
This tent will stand up in fair shape without a peg, but a peg at each end will draw the tent tight as a drum.
The rings at the four corners are to tie the drawstrings to, and can also be used for pegs when tent is left alone in exposed places.
Ample room in this tent for two people to sleep, to say nothing of the dog at the end.
The ribs are securely fastentd to the sides of the tent and remain so.
Fig. 3 shows how the tent rolls up, with the blankets inside.
The ends hook up to the end ribs, overlapping each other. A drawstring in the body of the tent breaks this crack, as illustrated.
Tent is nine feet long from point to point, and forty-two inches wide. More room than in a sleeping-car berth.
Tent completely closed makes a snug, warm bed. Partly open at each end and when topped with mosquito netting, gives absolute protection from insects and a cool place to sleep.
The only all-the-year sleeping bag made.
Top made from high grade double filled 10 oz. white duck and No. 6 brown duck floor.

Price.....$7.50 each net
Price with heavy double blanket..... 9.50 " "

STACK COVERS

MACHINE SEWED

Complete with Eyelets and Tie Ropes.
In ordering state whether Single Filling or Double Filling Duck is wanted.

Size	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	12 Oz. Single Filling or 10 Oz. Double Filling	12 Oz. Double Filling Duck
7x15	$3.00	$3.60	$4.50	$5.25
10x16	3.90	4.80	6.15	7.45
10x17	4.15	5.10	6.50	7.90
10x18	4.40	5.40	6.90	8.40
12x14	4.25	5.25	6.70	8.10
12x16	5.00	6.00	7.65	9.30
12x18	5.50	6.75	8.60	10.45
12x20	6.15	7.50	9.60	11.65
12x24	7.35	9.00	11.50	14.00
14x16	6.50	7.95	9.60	11.20
14x18	7.30	8.95	10.80	12.60
14x20	8.15	9.95	12.00	14.00
14x22	8.95	10.95	13.20	15.40
14x24	9.75	11.95	14.40	16.80
16x16	7.45	9.10	10.45	12.80
16x18	8.35	10.25	12.35	14.40
16x20	9.30	11.35	13.70	16.00
16x22	10.20	12.50	15.05	17.60
16x24	11.15	13.65	16.45	19.20
16x26	12.05	14.80	17.80	20.80
16x28	13.00	15.90	19.15	22.40
16x30	13.95	17.05	20.55	24.00
18x20	10.45	12.80	16.20	18.00
18x22	11.50	14.05	16.95	19.80
18x24	12.55	15.35	18.50	21.60
18x26	13.60	16.60	20.00	23.40
18x28	14.65	17.90	21.55	25.20
18x30	15.65	19.20	23.10	27.00
18x32	16.70	20.45	24.65	28.80
18x36	18.80	23.00	27.70	32.40
18x38	19.85	24.30	29.25	34.20
18x40	20.90	25.60	30.80	36.00
20x20	11.60	14.20	18.10	22.00
20x24	13.95	17.05	20.55	24.00
20x30	17.40	21.30	25.65	30.00
20x36	20.90	25.55	30.80	36.00
20x40	23.20	28.40	34.20	40.00
24x30	20.90	25.55	30.80	36.00
24x36	25.10	30.70	36.95	43.20
24x40	27.85	34.10	41.05	48.00
24x50	34.80	42.60	51.30	60.00
30x40	37.00	45.80	54.60	63.40
30x50	45.80	56.70	67.60	78.50

For Paulins, see page 288.

HAY-COCK COVERS

Hay-cock Covers are especially valuable in case of sudden storms coming up while the hay is in the shock. No good farmer can afford to be without a supply of these covers.

Made with Eyelets and Ropes in each corner, to which pegs can be attached, or the rope forced into the hay by a finishing thrust of the hay fork.

Size	Sheeting	Drill	8 Oz. Duck	10 Oz. Duck
3 x3 feet	$0.30	$0.35	$0.40	$0.45
3½x3½ "	.35	.40	.45	.55
5 x5 "	.55	.65	.75	.90
6 x6 "	.70	.85	.95	1.20
7 x7 "	.95	1.10	1.25	1.65

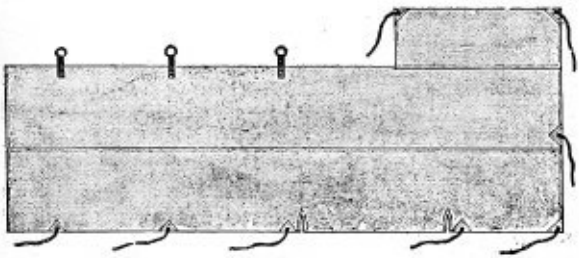
PAULINS

Size	13 oz. Hard Finish Sail Duck	15 oz. Hard Finish Sail Duck	18 oz. Hard Finish Sail Duck	20 oz. Hard Finish Sail Duck	Size	12 oz. Hard Finish Sail Duck	15 oz. Hard Finish Sail Duck	18 oz. Hard Finish Sail Duck	20 oz. Hard Finish Sail Duck
5½x 9	$3.80	$4.20	$4.80	$5.10	16 x 26	$31.90	$35.35	$40.20	$43.00
5½x 12	5.05	5.60	6.40	6.95	16 x 28	34.35	38.10	43.30	46.30
7 x 12	6.45	7.15	8.15	8.70	16 x 30	36.80	40.80	46.40	49.60
7 x 15	8.05	8.95	10.15	10.85	18 x 20	27.60	30.60	34.80	37.20
10 x 16	12.30	13.60	15.50	16.55	18 x 22	30.35	33.65	38.30	40.90
10 x 17	13.05	14.45	16.45	17.60	18 x 24	33.10	36.75	41.75	44.65
10 x 18	13.80	15.30	17.40	18.60	18 x 26	35.90	39.80	45.25	48.35
12 x 14	12.90	14.30	16.25	17.35	18 x 28	38.65	42.85	48.75	52.10
12 x 16	14.75	16.35	18.55	19.85	18 x 30	41.40	45.90	52.20	55.80
12 x 18	16.55	18.35	20.90	22.30	18 x 32	44.15	48.95	55.70	59.50
12 x 20	18.40	20.40	23.20	24.80	18 x 36	49.70	55.10	62.65	66.95
14 x 16	17.20	19.05	21.65	23.15	18 x 38	52.45	58.15	66.10	70.70
14 x 18	19.35	21.40	24.35	26.05	18 x 40	55.20	61.20	69.60	74.40
14 x 20	21.50	23.80	27.10	28.95	20 x 24	36.80	40.80	46.40	49.60
14 x 22	23.60	26.20	29.80	31.80	20 x 30	46.00	51.00	58.00	62.00
14 x 24	25.75	28.55	32.50	34.75	20 x 36	55.20	61.20	69.60	74.40
16 x 16	19.65	21.75	24.75	26.45	20 x 40	61.35	68.00	77.35	82.65
16 x 18	22.10	24.50	27.85	29.75	24 x 30	55.20	61.20	69.60	74.40
16 x 20	24.55	27.20	30.95	33.10	24 x 36	66.25	73.45	82.50	89.30
16 x 22	27.00	29.95	34.00	36.40	24 x 40	73.60	81.60	92.80	99.20
16 x 24	29.45	32.65	37.15	39.70	24 x 50	92.00	102.00	116.00	124.00

OUR PERFECT FIT

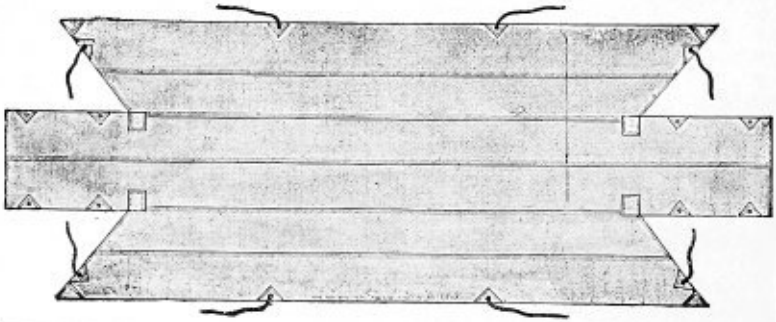
HARVESTER AND BINDER COVERS

Will Fit Any Machine



	Per Doz.	Each
12 oz. Double Filling Duck	$42.00	$3.75
10 oz. " " "	33.00	3.00
8 oz. " " "	30.00	2.75
12 oz. Single " "	33.00	3.00
10 oz. " " "	30.00	2.75
8 oz. " " "	24.00	2.25

SEPARATOR COVERS



"Pattern" covers are made so that they protect the machine completely when it is not in use, or when being moved from place to place. When the Separator is at work the cover fits between the wheels on the ground, making an excellent grain cloth.

In ordering, give length and width of top of separator.

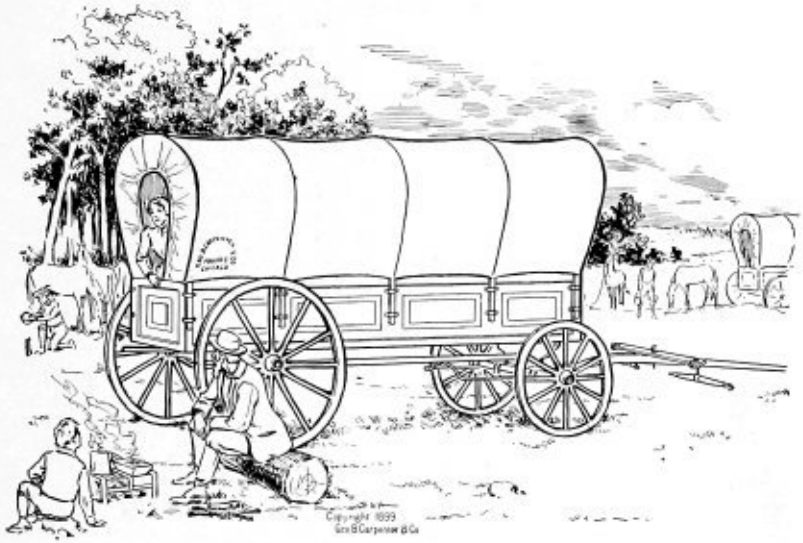
Those who prefer "spread" covers may order from list of Paulins.

We make covers of every description, and will quote price for any special design wanted.

12 oz. Double Filling Duck	each	$13.50
10 oz. " " "	"	12.00
8 oz. " " "	"	10.00
12 oz. Single " "	"	12.00
10 oz. " " "	"	10.00
8 oz. " " "	"	8.00
10 oz. Double Filling Duck Sides and Ends, Black Waterproof Center	"	16.00

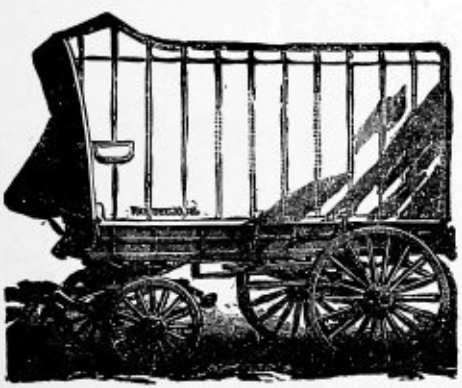
WAGON COVERS

Machine Sewed. Finished with Draw and Tie Rope



Any Size not Listed Below, Prices Figured in Proportion

Size	Drill	7 Oz. Single Filling Duck	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	12 Oz. Double Filling Duck	Size	Drill	7 Oz. Single Filling Duck	8 Oz. Single Filling Duck	10 Oz. Single Filling Duck	12 Oz. Double Filling Duck
10x10	$1.92	$2.25	$2.43	$3.06	$4.60	11x16	$3.48	$4.11	$4.38	$5.53	$8.38
10x12	2.30	2.73	2.92	3.66	5.55	11x17	3.67	4.34	4.67	5.88	8.89
10x13	2.51	2.96	3.15	3.96	6.01	11x18	3.88	4.60	4.96	6.22	9.45
10x14	2.71	3.19	3.40	4.27	6.49	11x20	4.30	5.11	5.53	6.94	10.52
10x15	2.89	3.44	3.66	4.57	6.96	12x14	....	....	4.26	5.35	8.11
10x16	3.08	3.67	3.90	4.89	7.43	12x15	....	....	4.58	5.73	8.70
10x17	3.30	3.90	4.16	5.18	7.90	12x16	....	....	4.99	6.11	9.27
10x18	3.48	4.14	4.41	5.48	8.38	12x17	....	....	5.21	6.50	9.86
10x20	3.88	4.62	4.92	6.10	8.85	12x18	....	....	5.52	6.88	10.44
11x13	2.82	3.34	3.55	4.45	6.78	12x20	....	....	6.15	7.65	11.62
11x14	3.03	3.59	3.82	4.82	7.29	12x22	....	....	6.78	8.43	12.78
11x15	3.25	3.85	4.11	5.16	7.84	....	....	....	....	....	.....



WAGON BOW COVERS

Especially for City Trucks and Wagons

These covers are made hand or machine sewed, of heavy sail duck, with or without rain-proof lining over the bows, finished with straps and buckles in order to attach or detach them quickly.

We furnish these covers finished in white, yellow or black. Owing to the great variety of sizes, we quote only on application.

For Sheet Wagon Covers, see page 288.

WATERPROOF COVERS

FINISHED WITH PATCHES AND ROPES

We carry in stock the largest assortment in both Imported and Domestic Waterproof Flax and Ducks in the United States — embracing Belgian Flax, Paraffine, Aquepella, Textol Army, Yellow Oiled, Army Brown Oiled, etc.

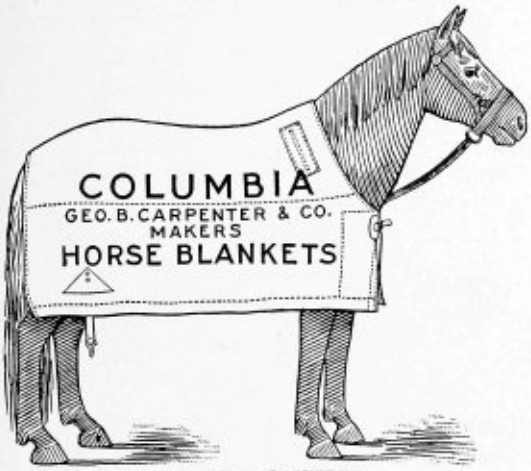
7 x 9 feet	$6.30	9½x14 feet	$13.30	14x16 feet	$22.40
7 x10 "	7.00	9½x16 "	15.20	14x20 "	28.00
7 x12 "	8.40	10 x14 "	14.00	16x18 "	28.80
7 x14 "	9.80	12 x16 "	19.20	16x20 "	32.00
8 x10 "	8.00	12 x18 "	21.60	16x22 "	35.20
9½x12 "	11.40	12 x20 "	24.00	16x24 "	38.40

Any Size, Shape or Weight to order.

Belgian Flax.....List less....%
No. 10 Brown Paraffine..... " ....%
12 oz. Army Brown Paraffine..... " ....%
10 " " " " ..... " ....%
8 " " " " ..... " ....%
12 " " White " ..... " ....%
10 " " " " ..... " ....%
8 " " " " ..... " ....%

10 oz. U. S. Army Tan Textol .....List less....%
8 " " " " ..... " ....%
10 " " " Yellow..... " ....%
10 " " " Brown..... " ....%
10 " Black Oiled..... " ....%

COLUMBIA CANVAS LINED STREET BLANKETS



STREET BLANKETS
Finished with Rawhide Breast and Tug Straps and Hame Leathers

BARN BLANKETS
Finished with Rawhide Breast Strap and Two Surcingles Attached

STREET BLANKETS

No.	Size	Covering	Each	No.	Size	Covering	Each
1 A	76x88	12 oz. Brown Paraffine	$4.80	13 B	80x96	12 oz. Brown	$4.80
2 A	84x90	12 " " "	5.20	11 C	76x88	12 " "	4.00
3 A	84x96	12 " " "	5.60	12 C	80x90	12 " "	4.25
1 B	76x88	12 " " "	4.60	13 C	80x96	12 " "	4.50
2 B	84x90	12 " " "	5.00	21 A	80x88	11 " White	4.00
3 B	84x96	12 " " "	5.40	22 A	80x90	11 " "	4.50
1 C	76x88	12 " " "	4.30	23 A	80x96	11 " "	4.80
2 C	84x90	12 " " "	4.80	21 B	80x88	11 " "	3.85
3 C	84x96	12 " " "	5.00	22 B	80x90	11 " "	4.30
11 A	76x88	12 " Brown	4.20	23 B	80x96	11 " "	4.60
12 A	80x90	12 " "	4.70	21 C	80x88	11 " "	3.60
13 A	80x96	12 " "	5.00	22 C	80x90	11 " "	4.10
11 B	76x88	12 " "	4.10	23 C	80x96	11 " "	4.25
12 B	80x90	12 " "	4.50				

BARN BLANKETS

No.	Size	Covering	Each	No.	Size	Covering	Each
51 A	76x76	12 oz. Brown	$4.00	61 A	78x76	12 oz. Burlap	$3.25
51 B	76x76	12 " "	3.85	61 B	78x76	12 " "	3.10
51 C	76x76	12 " "	3.70	61 C	78x76	12 " "	3.00
52 A	78x76	11 " White	3.85	63 A	78x76	10 " Burlap	3.15
52 B	78x76	11 " "	3.70	63 B	78x76	10 " "	3.00
52 C	78x76	11 " "	3.60	63 C	78x76	10 " "	2.85

RAIN PROOF HORSE COVERS

WAGON APRONS
Black Oiled

No. 1. 4 feet 2 inches x 2 feet 6 inches, with pocket.....each, $3.50

HAME COVERS

Reaching about 9 inches in Front of the Collar, and Used with any Style of Harness. Adapted to Draft Horses

No. 1.	84x72 inches,	Black Oiled	each, $4.00
No. 1.	84x72 "	Brown Paraffine	" 5.00
No. 2.	78x72 "	Black Oiled	" 3.75
No. 2.	78x72 "	Brown Paraffine	" 4.75

In ordering state if for Single, or Teams

GROUND BLANKETS
With Grommets in Corners. Black Oiled

3x6 feet	each,	$1.75
5x6 "	"	2.75
5x7 "	"	3.25
6x7 "	"	3.75

WAGON, TRUCK, AND BUGGY UMBRELLAS

With New Seat Fixture and Socket complete

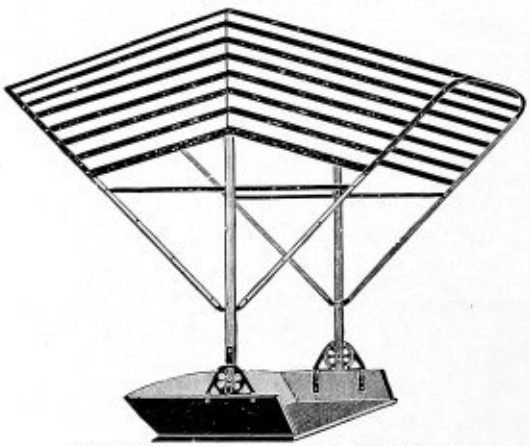
All XXX quality, have heavy one-eighth inch Steel Ribs, Hook and Ring Notcher, best Hardwood one and one-half inch handle, complete with our new type Malleable Fixture.

Covers	Size of Frame	Price with 8 Ribs	Price with 10 Ribs
BUGGY OR WAGON CLOTH Colors: White, Blue, Buff, Green, Red, Orange.	36-inch 38- " 40- "	$2.05 2.15	$2.15 2.25 2.40
HEAVY DRILL Colors: *White, *Blue, *Tan, Black, Red, Orange.	36-inch 38- " 40- "	$2.15 2.25	$2.30 2.40 2.55
DOUBLE-FACED DUCK Buff outside and Green inside	36-inch 38- " 40- "	$2.60	$2.75 2.90 3.10
FANCY STRIPE DUCK Colors: *Blue and White, *Yellow and White.	36-inch 38- " 40- "	....	$2.95 3.10 3.30

*Denotes style carried in stock. Other styles or sizes furnished on short notice.

THREE BOW WAGON TOPS

FOR WAGONS, TRUCKS AND BUGGIES



With All Irons Ready to Attach to Seat

PRICES ON REGULAR SIZES

Covered with blue striped duck $5.00
" " plain white, blue or brown duck 5.00
" " red stripe duck 5.50

Regular sizes, 34, 36, 38, 40, 42, 44, and 46-inch. For larger sizes add 50c. to list price.

☞ Send measure of seat from out to out on top.

Our Three Bow Tops are first class in every respect; neat, attractive and substantial.

MASON BAGS

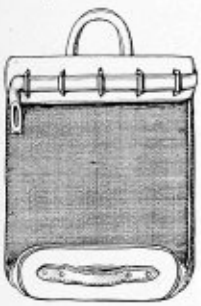
This bag is made of 18 oz. duck, sewed with heavy carpet twine, (on a lock-stitch machine, cannot rip unless every thread is cut has steel frame with lock and key, leather handles, billets and buckle pieces copper, riveted to frame.

Length, inch	With Pockets, per doz.	Without Pockets, per doz.
16	$16.80	$16.20
18	18.00	17.40
20	19.20	18.60
22	21.60	21.00
24	22.20	21.60

MECHANICS TOOL SATCHELS

Same grade and make as Masons, has heavy grain leather on bottom and 5 inches on sides.

Length, inches	Width, inches	Depth	Per Dozen
16	4½	15	$33.00
18	4½	15	36.00
20	4½	17	38.00
22	6½	17	42.00
24	6½	17	45.00

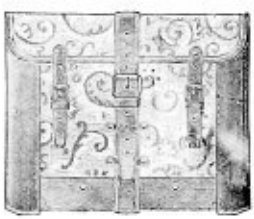


MAIL BAGS

Body 18 oz. brown or white duck. Leather bottom and handles. Leather top fitted with strap and oblong grommets.

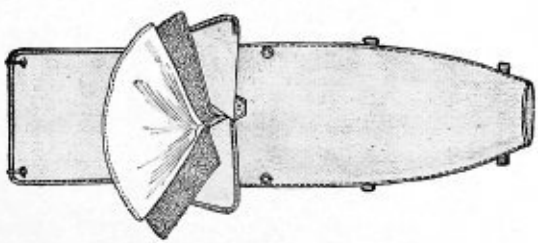
No.	Length, inches	Price Each
1	16 x 24	$5.00
2	18 x 24	5.75
3	20 x 26	6.50
4	20 x 30	7.00
5	22 x 36	8.00

PLUMBERS TOOL BAGS



This bag is made of Brussels Carpet lined with 15 oz. white duck; also 21 oz. duck lined with 15 oz. white duck, with leather bottom and sides; also with leather bottom and all canvas. All bags have two 1¼ in. straps and 1½ in. heavy belting strap with plated buckles. They are sewed by machine and riveted together with copper rivets, making them extra strong.

No. 33. Carpet with leather sides and bottoms, 20 in. long x 16 in. high, doz..... $33.00
No. 34. Canvas with leather side and bottoms, 20 in. long x 16 in. high, doz..... 30.00
No. 35. All canvas, 20 in. long x 16 in. high, doz..... 25.00
No. 36. Carpet with leather bottom, 24 in. long x 16 in. high, doz..... 30.00
No. 37. Carpet with leather bottom and sides, 16 in. long x 20 in. high, doz..... 33.00
No. 38. Canvas with leather bottom and sides 16 in. long, doz..... 30.00
No. 39. All canvas, 16 in. long x 20 in. high, doz..... 25.00

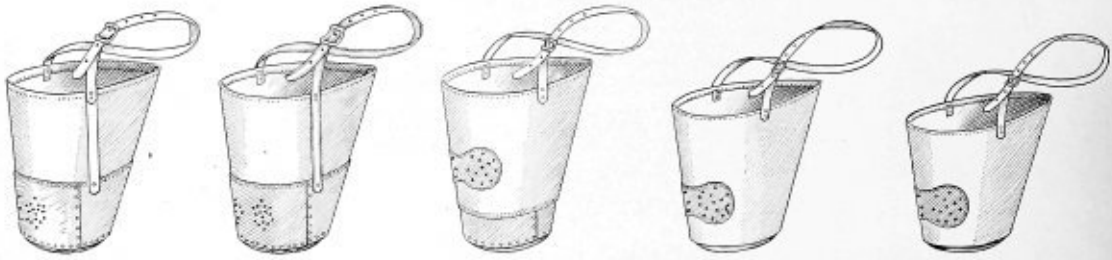


SLEEPING BAGS

Outside Bag is made of 18 oz. brown or ten duck, middle bag of Sheep Skin, inside bag of drilling, all removable, so they can be aired and cleaned. Outside Bag is fitted with straps on side, so that it can be suspended above ground by inserting pole on each side through the loops.

Each..... $15.00

FEED BAGS



Eureka Raymond No. 0 No. 1 No. 3

EUREKA

20 oz. duck top, harness grain leather bottom, sides and straps. Our best bag. Per dozen.....$20.00

RAYMOND

18 oz. duck top, heavy split leather bottom, sides and straps. Per dozen 19.00

No. 0

18 oz. duck top, split leather bottom straps and 2½-inch sides. Per dozen..... 13.00

No. 1

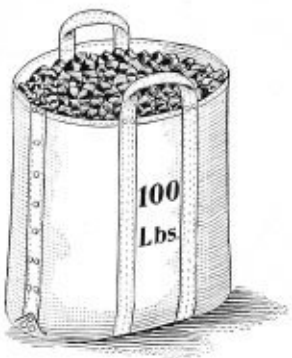
16 oz. duck top, russet grain leather bottom and strap. Per dozen 12.00

No. 3

12 oz. duck top, russet split leather bottom and black strap. Per dozen 7.50

COAL BAGS

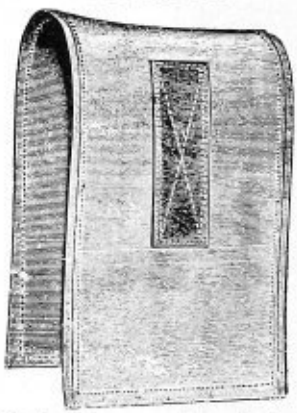
For Delivering Coal



Made of No. 4 duck, sewed and riveted with copperized rivets. Per hundred.$60.00

Same, mildew proofed, to prevent rusting. Per hundred 65.00

HOUSINGS



Made of heavy cotton duck, finished with rawhide hame leathers; all hand sewed.

No. 1. 50x19 inches, per pair $4.00

SAILORS' BAGS

With Draw String

White duck. Per dozen ...$13.00
Water proof. " " ... 20.00

PIANO COVERS

8 oz. duck.....each, $5.00
10 " " ..... " 5.60
No. 10. White, lined with Canton flannel.....each, 12.00
No. 10. Brown, lined with Canton flannel.....each, 14.00
10 oz. white, lined with Canton flannel .....each, 10.50
10 oz. brown, lined with Canton flannel .....each, 11.50

CAB CURTAINS

Finished with Grommets all around

No. 6 and No. 8 Duck

5 feet 4 inches x 7 feet 6 inches.....each, $....
5 feet 1 inch x 5 feet 11 inches.....each, ...
3 feet 1 inch x 6 feet 10 inches.....each, ...
6 feet 6 inches x 7 feet 6 inches.....each, ...

SAILMAKING

AN ART

Sailmaking is very much more of an art than is ordinarily supposed, and perfection in it can only be attained by long and careful study of the various uses to which sails of different kinds are put, and also of the many fabrics and methods of cutting, employed in their construction. It is a well-known fact that Duck or Sail Cloth, has threads running across it called the "filling," and others running lengthwise, over and under the filling, called the "warp," and that when strain is applied to the angle of the cloth, it will stretch. The threads of the Duck which run directly across upon the square line from the selvage, will stretch but little, and the difficulty which the sailmaker has to encounter is to calculate to what extent the cloths which are cut on an angle (or "gores," as they are called), will stretch when strained by the force of the wind. This is especially difficult in the modern Crosscut Racing Sails. It is necessary to know exactly how the different materials will act under strain, and also the nature and direction of the forces to which each sail will be subjected. Unless calculations and allowances are correctly made, an uneven and pressing sail will result. Furthermore, the relative placing of the center of effort of different sails, relative to the center of lateral resistance of the hull, is very important, and although this belongs to the province of the designer, rather than that of the sailmaker, we are both willing and able to give our customers the benefit of our study and experience, to aid them in determining the most effective placement and design of sails for their boats and yachts.

An old racing skipper once said that in winning a race one-third of the credit belonged to the Boat, one-third to the Sails, and one-third to the Man at the stick. Carpenter Sails guarantee your winning, provided you have the boat and the man.

Sailmaking is the oldest Department of our business and the one in which we take the greatest pride. Our foremen are all men of long practical experience both afloat and ashore, and we employ none but the most skilful yacht sailmakers to be found in the country. Most of our materials are made especially for us and cannot be purchased elsewhere. They comprise the best the market affords, both domestic and foreign

The best of yesterday is not good enough to-day. This is our motto, which we adhere to in every sense of the word, and our large business and facilities enable us to guarantee our patrons fair prices and prompt shipments.

An idea of the magnitude of this department of our business can be gained from the fact that we cut up, and sell annually, over two and one-half million yards of Canvas. An experience of many years enables us to refer to thousands who know us and the class of work we turn out.

No order is too large for our facilities. None too small to receive our best attention.

GEO·B·CARPENTER & CO.

MEASURING FOR SAILS

Exercise the greatest care in taking measurements.

If your boat or yacht is already sparred, send us the exact length of her masts, boom and gaffs, together with the following measurements:

The distance from bowsprit end to mast.

The distance from stem to mast.

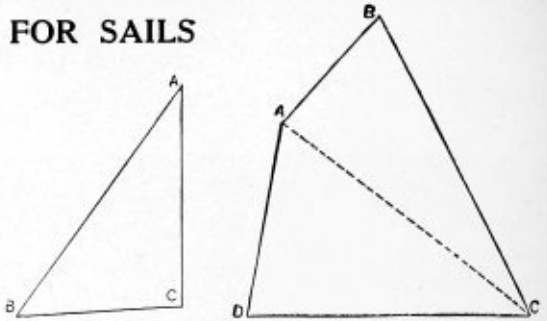
The distance from goose neck or saddle to throat halyard block.

The distance from saddle or goose neck to deck.

The distance from throat to clew, called "diagonal."

The length of each jib stay.

Send designs, plan or blue print, if possible.



FORE AND AFT SAILS

A to B.	Length of gaff.....	Feet.....		Inches
A " C.	Diagonal.....	"		"
A " D.	Length on mast.....	"		"
D " C.	" of boom....	"		"
B " C.	" on leach	"		"

JIB AND STAY SAILS

A to B.	Length on stay.....	Feet.....		Inches
A " C.	" on leach.....	"		"
B " C.	" of foot.....	"		"

GAFF TOPSAILS

For gaff topsails, it is necessary to know the distance from the gaff topsail halyard block to sheave hole at end of gaff, and from same to throat halyard block; also length of gaff from center of jaws to sheave hole.

State whether you wish a working topsail or a club topsail— if the latter, state length of club and yard.

BALLOON JIBS AND SPINAKERS

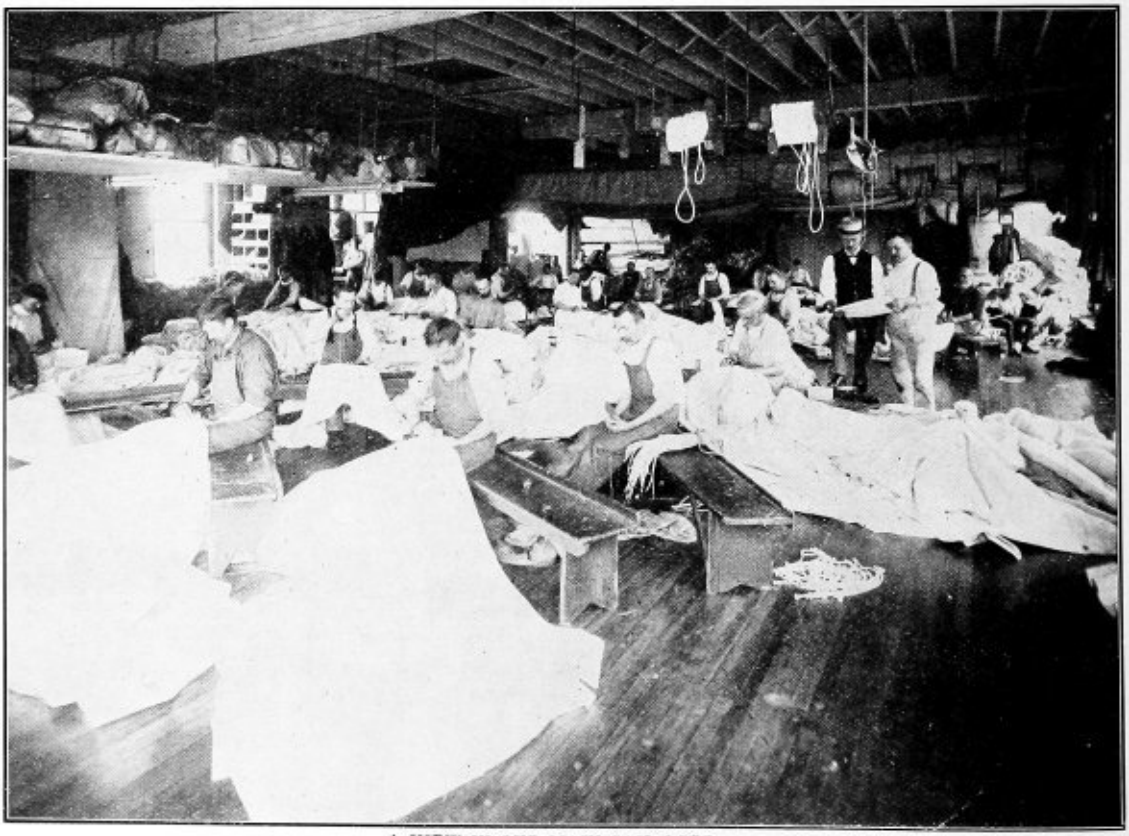
Distance from bowsprit end to mast.

Distance from mast at deck to spinaker or balloon jib halyard block. Length of spinaker pole.

SAIL COVERS

For Jibs.— State length of sail when furled and the girth at three or four points.

For Fore and Aft Sails.— State length of both boom and gaff, diameter of mast at goose neck, girth of furled sail (including spars) at mast, at gaff end and at boom end; also the exact distance from mast to each block on the gaff, and to topping-lift-band on boom, if any.

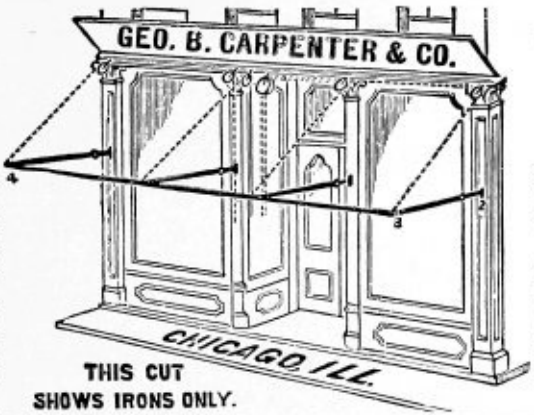


A VIEW IN OUR MAIN SAIL LOFT

In this Loft nothing but Hand Work is done, such as Sewing Sails, Finishing and Roping Tents, Paulins, etc.

AWNINGS FOR STORE FRONTS

The dotted lines show where the Cords are placed



THIS CUT SHOWS IRONS ONLY.

Proper location of Pulleys can also be seen

DIRECTIONS FOR MEASURING

Give size (see diagram above) from 1 to 2 (distance from where Awning fastens above the windows to where frame fastens to the columns), 2 to 3 (width of Awning or extension over the sidewalk), 3 to 4 (length of Awning or front of building from center to center of outside column).

SPECIAL NOTICE

Distance from 1 to 2 should be governed by height of store ceiling; allow 7 to 8 feet from bottom of frame (2) to sidewalk.

Mention if frame is to be fastened to wood, brick, stone or iron columns. Also if columns, to which frame is to be fastened, are in line. If not in line, state which ones, and how far back they are set.

PRICE LIST, COMPLETE WITH IRON OR PATENT WOODEN FRAME, ROPES, PULLEYS, ETC.

Height, or from 1 to 2 feet	Projection, or from 2 to 3 feet	Widths of Store Fronts, (from 3 to 4) Feet									
		8	10	12	14	16	18	20	22	24	62
3½	5	$7.85	$9.90	$10.80	$11.90	$14.00	$14.80	$15.70	$16.90	$18.40	$19.95
3½	5½	8.05	10.30	11.15	12.70	14.35	15.40	16.35	17.50	19.50	21.15
3½	6	9.45	11.15	12.35	13.55	15.85	16.50	17.65	18.60	20.85	22.60
4	5	7.90	10.00	11.05	12.25	14.10	14.90	15.80	16.95	18.80	20.40
4	5½	8.30	10.50	11.55	12.85	14.50	15.80	16.50	17.90	19.45	21.05
4	6	8.90	10.55	11.85	13.15	15.05	16.55	17.40	18.90	21.00	22.75
4½	5	8.00	9.75	10.80	12.10	13.65	14.65	15.35	16.70	18.95	20.55
4½	5½	8.60	10.70	12.00	13.35	14.85	15.90	16.75	18.50	20.15	21.85
4½	6	9.35	11.40	12.50	13.85	15.50	16.70	17.55	18.90	20.90	22.65
5	5	8.15	10.05	11.10	12.25	14.00	15.00	15.90	17.50	19.50	21.15
5	5½	8.60	10.45	11.65	13.05	14.70	15.65	16.55	17.85	20.00	21.65
5	6	9.50	11.55	12.80	14.15	15.95	16.70	17.80	19.15	21.30	23.10
5	6½	9.70	12.20	13.90	14.60	16.80	17.95	18.65	20.20	22.35	24.20
5	7	10.30	12.80	14.05	15.55	17.55	18.90	19.60	21.10	23.75	25.65
5½	5½	8.95	11.20	12.40	13.50	15.20	16.20	17.05	18.40	20.35	22.00
5½	6	9.40	11.35	12.55	14.05	15.85	16.85	17.75	19.10	21.10	22.85
5½	6½	9.90	12.25	13.45	14.80	16.90	17.90	19.00	20.30	22.60	24.50
5½	7	10.60	13.05	14.60	15.75	17.95	19.00	20.00	21.50	23.90	25.90
6	6	9.55	11.70	12.95	13.60	16.25	17.25	18.30	19.60	21.75	23.55
6	6½	10.00	12.45	13.65	14.90	17.00	17.95	18.95	19.75	22.50	24.35
6	7	10.85	13.20	14.30	16.10	18.15	19.35	20.15	21.85	24.25	26.25
6	7½	11.25	13.65	15.10	16.60	18.85	20.05	21.10	22.25	24.90	27.00
6	8	11.65	14.30	15.65	17.20	19.60	20.75	21.80	23.50	25.70	27.85
6	9	13.05	16.00	17.55	19.25	21.55	22.50	24.10	25.85	28.80	31.20
6½	6½	10.25	12.40	13.80	15.30	16.70	18.40	19.25	20.85	23.00	24.95
6½	7	10.90	13.05	14.55	16.05	18.05	19.15	20.55	22.20	24.00	26.00
6½	7½	11.25	13.70	15.80	16.80	19.05	20.15	21.25	23.10	25.35	27.50
6½	8	11.75	14.55	16.10	17.75	20.05	21.00	22.20	23.95	26.40	28.60
6½	9	13.00	15.95	17.35	19.20	21.75	22.90	23.70	25.60	28.60	31.00
7	7	11.05	13.30	14.85	16.50	18.35	19.60	20.45	22.30	24.00	26.00
7	7½	11.35	13.65	15.20	16.90	18.75	19.85	21.15	23.40	25.35	27.50
7	8	12.30	14.60	16.15	17.85	20.15	21.40	22.50	24.20	26.85	29.10
7	9	13.20	15.85	17.60	19.35	21.85	23.20	24.45	26.00	28.80	31.20
7½	7½	11.85	14.00	15.45	17.20	19.35	20.70	21.60	23.15	25.75	27.90
7½	8	12.10	14.60	16.15	17.85	19.95	21.30	22.30	24.15	26.70	28.75
7½	9	13.50	16.15	17.85	19.95	22.30	23.45	24.60	26.50	29.30	31.75
8	8	12.40	14.95	16.50	18.35	20.40	21.70	22.95	24.65	27.30	29.60
8	9	13.70	16.45	17.95	19.60	22.55	23.80	25.05	26.90	29.40	31.85
9	9	14.10	16.70	18.45	20.30	22.80	24.10	25.30	28.80	30.10	32.60
9	10	15.20	18.20	20.05	22.10	24.55	26.20	27.55	29.55	32.10	34.80

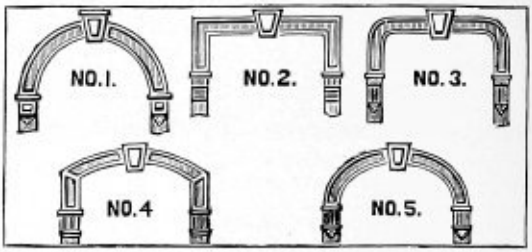
Lettering on top of Awning ..... per foot $0.10
" " curtain of Awning ..... " .05

¾ Iron or Gas Pipe Frame, add $1.00 to price. If Awnings are wanted without Frame, an allowance of 20 per cent of above list will be made.

DOOR AND WINDOW AWNINGS

In ordering Door and Window Awnings, measures should be taken on the Door or Window Frames, not on the brick work. Give width of opening and length to center of casement. In all cases state the shape of Top as per cuts and numbers above.

Complete with Iron Frame, Pulleys, Rope, etc., ready to put up. If awnings are wanted without frame, an allowance of 20 per cent of list price will be made.



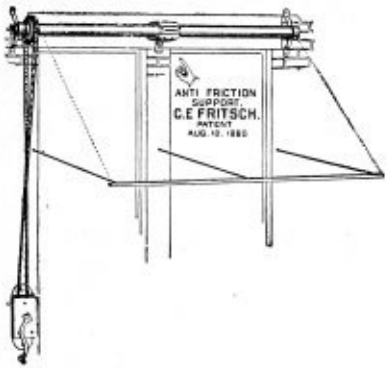
Height	Projection	Widths										
		2 feet.	2ft.6in.	3 feet.	3ft.6in.	4 feet.	4 ft. 6 in.	5 feet.	5 ft. 6 in.	6 feet.	6 ft. 6 in.	7 feet.
2 ft. in.	2 ft. in.	$2.85	$2.95	$3.30	$3.40	$3.75	$3.80	.....	.....	.....	.....	.....
2 " 6 "	2 " 6 "	3.20	3.20	3.60	3.70	4.05	4.10	$4.15	.....	.....	.....	.....
3 "	3 "	3.50	3.60	3.95	4.05	4.40	4.60	4.65	$5.00	.....	.....	.....
3 " 6 "	3 "	4.00	4.05	4.45	4.70	5.10	5.30	5.30	5.65	.....	.....	.....
4 "	3 "	4.40	4.45	4.80	5.00	5.40	5.60	5.60	5.95	$6.30	.....	.....
4 " 6 "	3 "	4.60	4.65	5.00	5.20	5.60	5.75	5.80	6.20	6.25	$6.80	$6.85
5 "	3 "	4.95	5.00	5.40	5.45	5.95	6.15	6.20	6.70	6.75	7.15	7.15
5 " 6 "	3 "	5.15	5.20	5.60	5.65	6.35	6.55	6.60	6.95	7.00	7.55	7.60
3 " 6 "	3 " 6 "	4.50	4.55	4.95	5.00	5.60	5.75	5.75	.....	.....	.....	.....
4 "	3 " 6 "	4.80	4.80	5.20	5.25	5.85	6.00	6.05	6.40	.....	.....	.....
4 " 6 "	3 " 6 "	4.85	4.90	5.40	5.60	6.30	6.35	6.50	7.00	7.05	.....	.....
5 "	3 " 6 "	5.05	5.10	5.60	5.80	6.50	6.55	6.70	7.20	7.25	7.60	.....
5 " 6 "	3 " 6 "	.....	5.35	5.80	5.85	6.70	6.75	6.90	7.40	7.75	.....	.....
6 "	3 " 6 "	.....	6.55	5.85	6.10	6.85	6.95	7.00	.....	.....	.....	.....
6 " 6 "	3 " 6 "	.....	.....	6.10	6.30	7.10	7.20	7.20	7.75	7.70	8.45	.....
4 "	4 "	.....	.....	5.50	5.85	6.45	6.55	6.60	6.90	7.00	7.55	7.60
4 " 6 "	4 "	.....	.....	5.75	5.95	6.75	6.80	6.90	5.20	7.25	7.80	7.85
5 "	4 "	.....	.....	5.95	6.20	6.95	7.05	7.10	7.60	7.70	8.05	8.10
5 " 6 "	4 "	.....	.....	6.20	6.40	7.15	7.25	7.30	7.80	7.85	8.25	8.30
6 "	4 "	.....	.....	6.40	6.60	7.40	7.25	7.55	8.05	8.10	8.60	8.65
6 " 6 "	4 "	.....	.....	.....	7.20	7.75	7.80	8.00	8.50	8.60	9.10	9.15
7 "	4 "	.....	.....	.....	7.40	7.95	8.05	8.20	8.75	8.80	9.45	9.50
4 " 6 "	4 " 6 "	.....	.....	.....	6.15	6.75	6.80	7.10	7.60	7.65	8.20	8.25
5 "	4 " 6 "	.....	.....	.....	6.60	7.90	7.10	7.40	7.90	7.95	8.45	8.50
5 " 6 "	4 " 6 "	.....	.....	.....	6.80	7.40	7.45	7.75	8.25	8.30	8.80	8.85
6 "	4 " 6 "	.....	.....	.....	7.00	7.60	7.65	7.95	8.45	8.50	9.00	9.05
6 " 6 "	4 " 6 "	.....	.....	.....	7.50	8.00	8.05	8.20	8.80	8.95	9.45	9.50
7 "	4 " 6 "	.....	.....	.....	7.70	8.20	8.25	8.40	9.15	9.30	9.80	9.85
5 "	5 "	.....	.....	.....	6.80	7.35	7.40	7.55	8.10	8.25	8.80	8.85
5 " 6 "	5 "	.....	.....	.....	7.10	7.60	7.65	5.80	8.40	8.45	9.05	9.10
6 "	5 "	.....	.....	.....	7.30	7.80	7.85	8.05	8.60	8.80	9.30	9.35
6 " 6 "	5 "	.....	.....	.....	7.50	8.00	8.05	8.20	8.95	9.15	9.65	9.70
7 "	5 "	.....	.....	.....	7.75	8.40	8.45	8.60	9.20	9.35	10.00	10.50
5 " 6 "	5 " 6 "	.....	.....	.....	7.55	8.05	8.10	8.25	9.10	9.15	9.55	9.70
6 "	5 " 6 "	.....	.....	.....	8.00	8.65	8.70	8.85	9.40	9.55	10.05	10.10
6 " 6 "	5 " 6 "	.....	.....	.....	8.45	9.00	9.00	9.05	9.70	9.85	10.40	10.40
7 "	5 " 6 "	.....	.....	.....	8.65	9.20	9.20	9.25	10.05	10.20	10.75	10.80
7 " 6 "	5 " 6 "	.....	.....	.....	8.90	9.40	9.45	9.50	10.30	10.45	10.95	11.00
6 "	6 "	.....	.....	.....	.....	8.40	8.45	8.55	9.15	9.30	9.80	9.90
6 " 6 "	6 "	.....	.....	.....	.....	9.40	9.40	9.50	10.25	10.40	10.95	11.00
7 "	6 "	.....	.....	.....	.....	9.75	9.80	9.85	10.50	10.65	11.30	11.40
7 " 6 "	6 "	.....	.....	.....	.....	9.95	10.00	10.05	10.85	11.00	11.65	11.75
8 "	6 "	.....	.....	.....	.....	10.20	10.20	10.30	11.05	11.20	11.90	11.95
6 " 6 "	6 " 6 "	.....	.....	.....	.....	10.00	10.05	10.10	10.70	10.90	11.55	11.60
7 "	6 " 6 "	.....	.....	.....	.....	.....	10.30	10.35	11.15	11.30	12.00	12.05
8 "	6 " 6 "	.....	.....	.....	.....	.....	10.90	10.95	11.75	11.90	12.55	12.60
9 "	6 " 6 "	.....	.....	.....	.....	.....	11.45	11.50	12.45	12.60	13.30	13.35
7 "	7 "	.....	.....	.....	.....	.....	10.45	10.50	11.30	11.45	12.00	12.05
7 " 6 "	7 " 6 "	.....	.....	.....	.....	.....	10.85	10.90	11.70	11.85	12.55	12.60
8 "	8 "	.....	.....	.....	.....	.....	11.45	11.50	12.40	12.60	13.25	13.30

AWNING STRIPES

We have, at all times, the latest and best patterns in Awning Stripes. Samples sent on application. See page 250.

ROLLER AWNINGS

Chain Gear



We call your attention to our Roller Awnings, which are especially adapted to large store fronts, because of their perfect fit and the ease with which they can be raised and lowered, and therefore protected from sudden storms. The increased cost of these awnings over the ordinary style is more than counterbalanced by the many advantages they possess. Our adjustable box is the best on the market. We have used it for years, it has been thoroughly tested, and is giving universal satisfaction. The old style box is large, clumsy, holds the dirt which clogs the wheel, and is therefore continually out of order, and liable to break while in such condition. Our new style box is smaller, stronger, has an opening in the bottom large enough so that all the dirt falls through, and therefore does not interfere with the workings of the box. Another important advantage over the old box is that the pin which held the awning in position is done away with, and we have in the new box a safety key, which is much more simple, and will not break or get out of order.

PRICE LIST PER FRONT FOOT

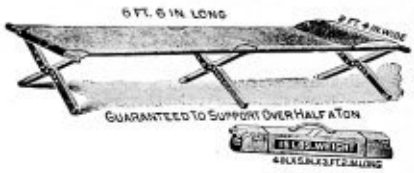
1 to 2 or up	2 to 3 or out	10 to 16 ft. per ft.	16 to 20 ft. per ft.	20 to 24 ft. per ft.	24 to 30 ft. per ft.	30 to 40 ft. per ft.	40 to 48 ft. per ft.	48 ft. and over per ft.
6 ft.	6½ ft.	$2.00	$1.65	$1.50	$1.41	$1.37	$1.27	$1.21
7 "	7½ "	2.25	1.85	1.67	1.59	1.54	1.43	1.34
8 "	8½ "	2.50	2.05	1.84	1.77	1.71	1.59	1.47
9 "	9½ "	2.80	2.25	2.00	1.95	1.88	1.00	1.60
10 "	10½ "	2.95	2.45	2.18	2.13	2.05	1.91	1.73

DIRECTIONS FOR PUTTING UP ROLLER AWNING

When top of store front is level, first, fasten center support at the height desired from sidewalk. Second, fasten the ends of the roller at the level of the center of the center support, then put on end brackets on ends of roller. If front of building is not level, it will be necessary to make special irons to build out part or parts which set back. When putting up frame, take end bar and measure from center of roller down, and end of bar will be the place where joint should be fastened. If slide rods are to be used, measure with end bar same as above, letting slide rod extend from end of bar upward. If slide rods are to work automatically, fasten wire or rope at a point from building on the extension bars, the length of slide rod, then lower awning and raise bars to top of slide rods, and fasten wire or rope to building, the same distance above the slide rods as the length of same.

CAMP FURNITURE

GOLD MEDAL FOLDING CAMP BED



This bed is covered with an extra good quality of 12 ounce brown duck. Can be furnished in same quality white duck. It is easily and quickly opened and folded, and stands firmly on the floor or adjusts itself to uneven ground when necessary. It has a duck fold which is readily converted into a pillow.

Dimensions of No. 1

Opened: 6 feet 6 inches long; 2 feet 4 inches wide. Folded: 39 inches long, 4 inches thick, 5 inches wide. Weight: 16 pounds.

Per doz.....$40.00 Each.....$3.35

No. 1½ same as No. 1 except it has 12 ounce double filled duck top and leather straps.

Per doz.....$42.00 Each.....$3.50

No. 50

Same construction as No. 1 with exception of duck, which is 14 ounce, and bed 36 inches wide.

Per doz.....$50.00 Each.....$5.00

No. 9 MOSQUITO-BAR FRAME

Per doz.....$9.00 Each.....$0.75

No. 9N MOSQUITO NETTING

Per doz.....$18.00 Each.....$1.50

Can be used on No. 1 and 50 beds.

GOLD MEDAL FOLDING HOUSE COT

No. 2. Brown Duck Covering

Dimensions

Opened: 6 feet 6 inches long; 2 feet 3 inches wide.

Folded: 6 feet 6 inches long, 4 inches square.

Weight, 12 pounds.

Per doz.....$28.00 Each.....$2.35

THE IMPROVED YANKEE COT

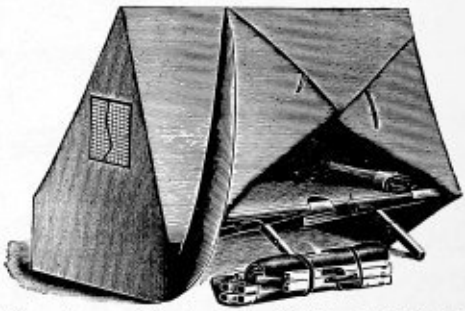
FOLDED 32X4X6

The best canvas cot on the market. Will support 1,000 lbs; has brown duck top. 29 inches wide by six feet 6 inches long

Weight 15 pounds. Folded 32x4x6 inches.

Per doz.....$42.00 Each.....$3.50

COMBINATION COT AND TENT



Complete as illustrated, with No. 1 Gold Medal Cot.

8	ounce	white	duck	Each	$8.00
10	"	"	"	"	8.70
8	"	brown	"	"	8.50
10	"	"	"	"	9.00
8	"	khaki		"	10.00

Weight about 25 pounds.

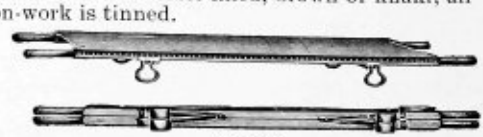
COMMON CAMP COT

Has white duck covering; it is 6 feet 3 inches long; 2 feet 4 inches wide; weight 17½ lbs.

Per doz.....$21.00 Each.....$1.75

UNITED STATES ARMY LITTER

Adopted by the Medical Department of the United States Army. The wood-work all air-dried, White Ash; the feet malleable iron; the braces forged steel; the duck 12 oz. double filled, brown or khaki; all the iron-work is tinned.



No. 100

Litter..per doz.	$84.00	Each.....	$7.00
Slings (pair) "	36.00	Pair.....	3.00

No. 7 GOLD MEDAL FOLDING CAMP TABLE

This table is all made of hard wood, with top 2 feet 3 inches wide and 3 feet long, and is finished with filler and varnish. In use it is very strong and rigid, and is guaranteed to support 300 pounds. Size, folded, 3 feet long by 5 x 7 inches. Weight, 16 pounds.
Per dozen.....$40.00 Each.....$3.35
No. 8—Folding Shelf, to use with table.
Per dozen.....$8.00 Each.....$0.75

PEERLESS FOLDING TABLES

An ideal table for house, porch, or camp. Will support 1,000 pounds
Is an attractive table in appearance and finish. Legs fold under table top.

No. 301. Weathered oak finish. 30-inch diameter. Weight, 16 lbs.
Per dozen.....$48.00

No. 311. Weathered oak finish. 30 x 30 inches. Weight, 16 pounds.
Each.....$4.00

FOLDING WOOD CHAIRS

No. 200

This is one of the best folding wood chairs on the market, being handsome in appearance, strong and durable. A special feature being the small space it occupies while not in use, making it very desirable for those having little space for storing.
Weight, 9¼ pounds.
Per dozen.....$9.50
Each..... .80

No. 40

Is a strong, light weight and compact chair. Simple in construction; self-locking. Finished in natural wood and varnished.
Seat, 13½ x 14 inches.
Weight, 5¼ pounds.
Per dozen.....$10.00
Each..... .85

No. 44

This chair has curve in back which makes it very comfortable. Seat is framed and glued, has center slats apart to prevent accumulation of rain, etc. Natural wood finish, varnished.
Seat is 14 x 14½ inches.
Weight, 8½ pounds.
Per dozen.....$13.00
Each..... 1.10

No. 45

Same as No. 44, with exception of the seat, which is padded and covered with an imitation leather cover.
Weight, 8½ pounds.
Per dozen.....$16.00
Each..... 1.35

No. 6

This chair is braced, will support 500 pounds. It folds into a small space, and for numerous uses is unequaled. It is a comfortable chair for any use.
Weight, 4½ pounds.
Per dozen.....$9.00
Each..... .75

GOLD MEDAL CHAIR No. 25

This a very attractive and comfortable chair; guaranteed strong enough to support 300 pounds; folds very compactly. It is made of hard wood, has turned legs, nicely finished with filler and varnish. It is thoroughly protected with cross rivets where liable to split. Seat of fine brussels carpet. Weight, 4 pounds.
Per doz....$11.75 Each.....$1.00

No. 10

This chair has a seat of good brussels carpet, frame is all made of hard wood, birch, or rock elm, nicely finished with filler and varnish.
Weight, each, 5 pounds.
Per dozen.....$13.80
Each..... 1.15

No. 101

Has striped duck seat, hardwood frame and back. Is a comfortable chair.
Weight, 4 pounds.
Per dozen.....$5.40
Each..... .45

FOLDING CAMP STOOL

No. 100

Has striped duck seat; hard-wood frame. Is an excellent stool for general use.

Weight, 2¾ pounds.
Per doz.....$4.20 Each.....$0.35

GOLD MEDAL FOLDING CAMP CHAIR

No. 3

This chair may be folded and carried as easy as an umbrella.

Size, folded, 3 feet long by 3 inches square.

Weight, 4½ pounds.
Per doz....$20.00 Each $1.70

No. 4. Same style and construction as above, but 6 inches higher so as to afford a rest for the head. Guaranteed to support 400 pounds.
Per doz....$25.00 Each.....$2.10

GOLD MEDAL FOLDING CAMP STOOL

No. 5

Has brown duck top, hard-wood frame. Is braced as shown. Will support 500 pounds.

Weight, 3 pounds.
Per doz.....$6.00 Each.....$0.50

GOLD MEDAL CAMP STOOL

No. 32

It is strong enough to support 300 pounds or more. The seat is of heavy brown duck, reinforced and tacked at corners. The legs are fastened to a malleable iron center piece with rivets, and each leg rests on two shoulders, one on each side; when folded is 2 feet long and 2½ inches square.

Weight, 1½ pounds.
Per doz.....$4.00 Each.....$0.35

R. R. CAMP STOOL

No. 115

The strongest camp stool made. Carpet cover, extra heavy frame, stained dark. It is used on Observation and Parlor cars. Makes an ideal stool for house.

Weight, 6¼ pounds.
Per doz....$12.00 Each.....$1.00

FOLDING EASY CHAIR

Has heavy white canvas cover and back. Is the favorite porch chair.

Weight, each, 7½ pounds.
Per doz....$30.00 Each.....$2.50

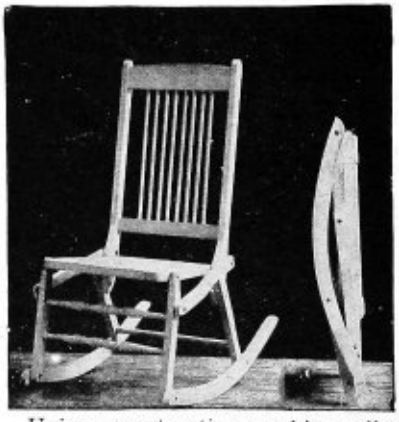
GOLD MEDAL STOOL

No. 26

This is a very attractive and comfortable chair; guaranteed strong enough to support 300 pounds; folds very compactly. It is made of hard wood, has turned legs, nicely finished with filler and varnish. It is thoroughly protected with cross rivets where liable to split. Seat of fine brussels carpet.

Weight, 3½ pounds.
Per doz....$10.00 Each.....$0.85

FOLDING ROCKER



Unique construction combines all the best points of the old home rocker. Easily opened and closed, light weight. Has seat 17x17 inches.

No. 75. With arms, weight, 16 pounds. Per doz. $52.00 Each $4.50
No. 76. Without arms, " 13 " " 40.00 " 3.50

RECLINING CHAIR

With Arms. Wood Frame

No. 48

Weight, 12 pounds.
With Arms.
Per doz., $19.00; each, $1.60

No. 49

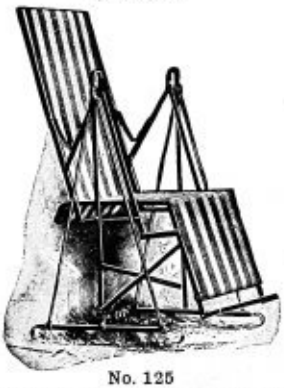
Weight, 11 pounds,
Without Arms.
Per doz., $16.00; each, $1.20

RECLINING CHAIR

No. 50
With Foot Rest
Wood Frame

Weight, 15½ pounds.
Per doz.....$24.00; each.....$2.00

"COMFORT" SWING CHAIR



No. 125

To "set up" the "Comfort" swing chair requires but the insertion of three small stove bolts in the standards; none in the seat. The seat simply unfolds and is instantly ready to be hung in the links in the loops of the standards. To recline requires no adjustment whatever. Every change of position is entirely automatic and without the slightest effort. Attachment at head and foot provides for keeping canvas tight.

"COMFORT" RECLINING CHAIR

No. 127
(Does Not Swing)

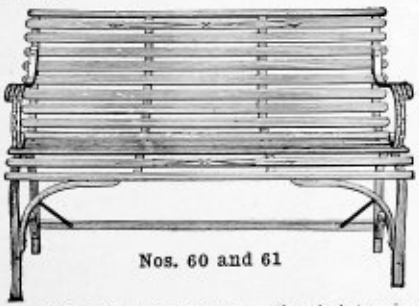
The insertion of only two small stove bolts "sets up" the No. 127 "Comfort" reclining chair. The construction of the seat part is exactly the same as that of the No. 125 swing chair. The automatic change of position and the attachment for tightening canvas are also the same. The only difference is in the base which supports the seat so that it does not swing.

"COMFORT" RECLINING CHAIRS

Nos. 125 and 127

The materials in the "Comfort" porch chairs are steel and canvas. The framework is made of strong, highly tempered steel, coated with rust-proof black enamel, made permanent in high-temperature baking ovens. The seat and back are made of fancy colored canvas overlapped in the center. Guaranteed strong and durable for light or heavy occupant. Weight, 42 pounds. In shipping are k. d. and crated.
Per doz.....$55.00; each..... $4.60

FOLDING SETTEES



Nos. 60 and 61

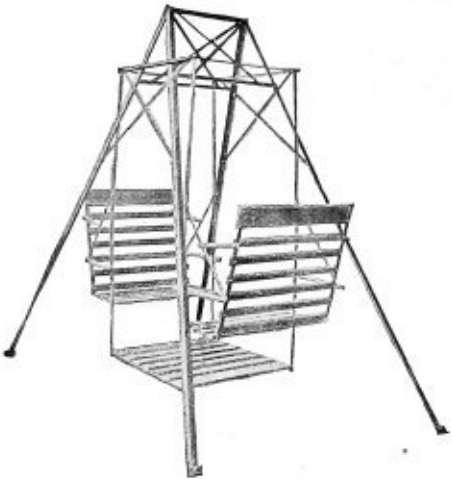
The finest finish on the market. The skeleton is selected rock elm and carefully bent into shape, with flat friction joints which will not loosen. Seat slats are clean hard wood. Painted in bright vermilion or green; striped and varnished.
No. 60. 4 ft. long, 4 legs, weight, each, 25 lbs, per doz., $72.00
No. 61. 5 " 6 " " " 30 " " 78.00

Nos. 41 and 42

Seasoned hard wood lumber. No nails; screws are used in construction, corners rounded, sandpapered, varnished. Frames are painted red or green. Slats finished natural color.
No. 41. 3½ ft. long; weight, each, 20 lbs.....per doz., $24.00
No. 42. 4½ " " " 27 " ..... " 30.00

LAWN SWING

The Erickson—Steel Construction

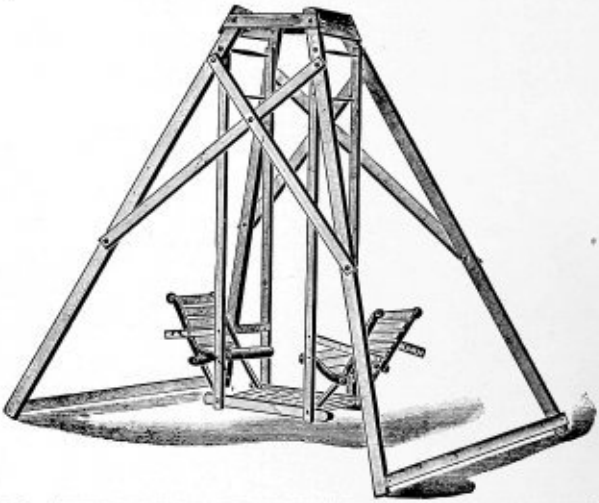


Without exception the strongest Lawn Swing made. Guaranteed for 800 lbs. Tested to 1,200 lbs. Uprights are made of $1\frac{1}{2}$ x $1\frac{1}{2}$ x $\frac{3}{16}$" Angle Steel. Braces are 1 x 1 x $\frac{1}{8}$" Angle Steel and $\frac{3}{16}$ x 1" Flat Steel. All bolts are $\frac{5}{16}$ x 3" except for arm rest which are $\frac{5}{16}$ x 2".
Hardwood slats for seat and platform. Emerald Green finish.

Height feet	Seat Wide inches	Weight lbs.	Each
9	33½	200	$15.00

STANDARD

These swings are very strong and will last a number of years. Frames are made of selected hard pine 2 x 3 inches. Chairs are made of hardwood, and the entire swing is well painted in bright colors, or finished in the natural color if preferred. The chairs and frames are put together with bolts.

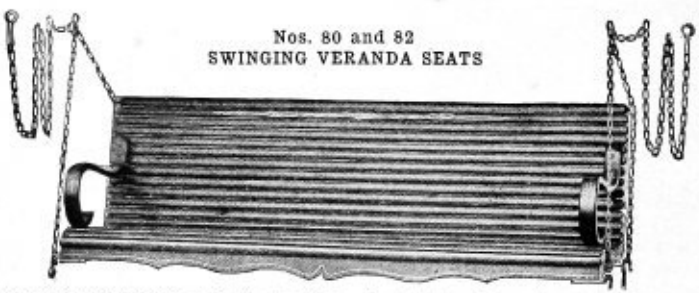


CHILD'S

Height feet	Width Seat inches	Each	Canopy Each, Extra
6	16	$5.00	.....
8	18	7.00	$4.50
10	30	11.00	5.00

Height feet	Width Seat inches	Each	Canopy Each, Extra
8	26	$12.00	$4.60
10	32	15.00	5.00
12	34	18.00	5.00
14	36	36.00	6.25
16	38	48.00	6.25

Nos. 80 and 82
SWINGING VERANDA SEATS

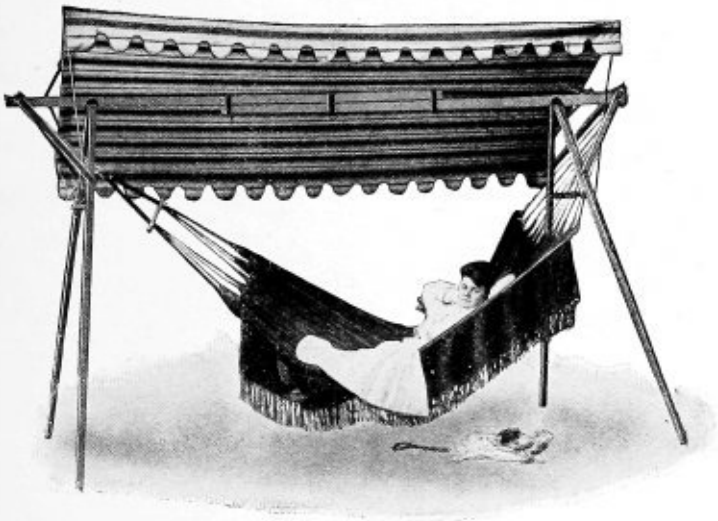


This seat CANNOT BE TIPPED over by children climbing on the back—a dangerous feature of nearly every other pattern. The frame is of selected rock elm, bent to the proper shape, and seating and back are formed of hardwood slats of peculiar form, placed close together to form a comfortable and durable support for the body. In addition the seat is trussed underneath with a strong frame to prevent any sagging in center. Especial pains is taken with the finish on these designs and can furnish painted throughout in red or green, suitably striped and varnished. This seat is suspended from the ceiling or any convenient support by means of C. plated fork chain and hooks as illustrated and the arrangement of the forked chain enables the angle of the back to be adjusted to any desirable position. By utilizing the various links in the chain it is also possible to adjust to any height of ceiling.

No. 80. Length 6 feet, painted red or green, with ceiling hooks and sufficient chain for 9 foot ceiling.....each, $12.50

No. 82. Length 3 feet, painted red or green, complete with hooks and chain for 9 foot ceiling; twenty-five cents net per foot extra for longer chains. This charge covers one extra foot on each chain .....each, 10.50

No. 52 HAMMOCK FRAME



These frames are very light, exceedingly strong, and stand firmly wherever placed. Legs are riveted into malleable castings and not onto the ridge poles as in other models. The braces are secured by rivets and thumb bolts at the proper angle to furnish the greatest strength at all points of strain when in use. The length may be adjusted to accommodate hammocks from 8 to 14 feet, and entire frame folds into compact bundle for shipment or storage. The awning is held in position by four heavy springs, which allow for shrinkage and keep the material taut and true as well as free from the waving effect of the wind.

Construction is simple, not likely to get out of order. Easily set up or extended. We guarantee the material and construction in every way, and will gladly replace any defective parts, or return the purchase price if not satisfactory. A strong, practical, and desirable frame, at a price within the reach of all.

Frame only, no awning. Weight 35 lbs. each, folded in a bundle 6 in. x 6 in. x 9 feet.....each $6.00

Frame and awning, as illustrated. Weight, 40 lbs.....each 14.00

LAWNETA

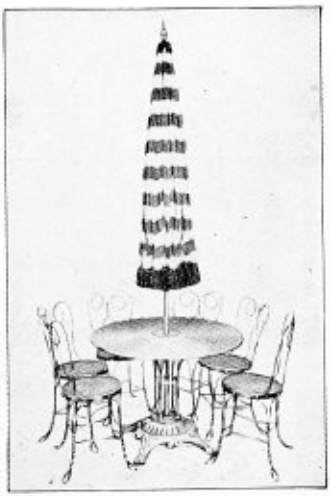
The "Lawneta" table is made of an artistic metal design, enameled and handsomely decorated. It is forty inches in diameter and seats six persons comfortably.

The canopy is nine feet in diameter, and framework is made of strong steel ribs which cannot bend or break. The pole supporting the canopy is inserted in a pipe which is screwed into the ground for out-of-door use. The canopy may be adjusted to any height desired. It is made of heavy sail drill, in the following colors: Green and white stripes, red and white stripes, orange and white stripes, solid tan and solid drab, the fringe matching the solid color.

Chairs are all metal, strong and durable.

A beautiful effect is produced at night by the use of electric lights, the canopy forming a brilliant and artistic setting for those dining.

All canopies are made with a ring on each rib, and curtains can be furnished with snap rings, to be hooked to canopy. The curtain is quickly adjusted for protection from sun and wind from any quarter, also affording seclusion for the occupants.



Without chairs.....each, $65.00
Chairs, extra..... " 2.75

LAWN CANOPY

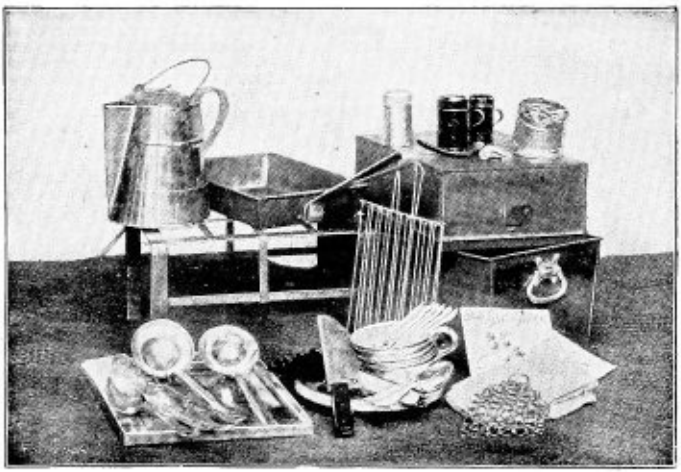
Size Spread, 8 feet

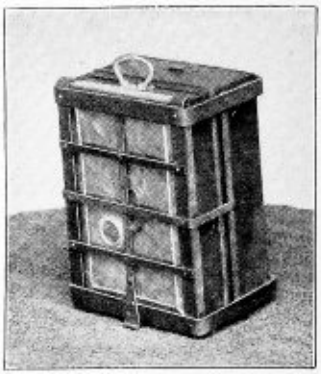
Heavy drills.....each, $9.00
Fancy stripe..... " 11.00

Red and blue, red and white, orange and white.

Prices include a heavy ground screw, with a receptacle for the handle.

KAMP KOOK'S KIT





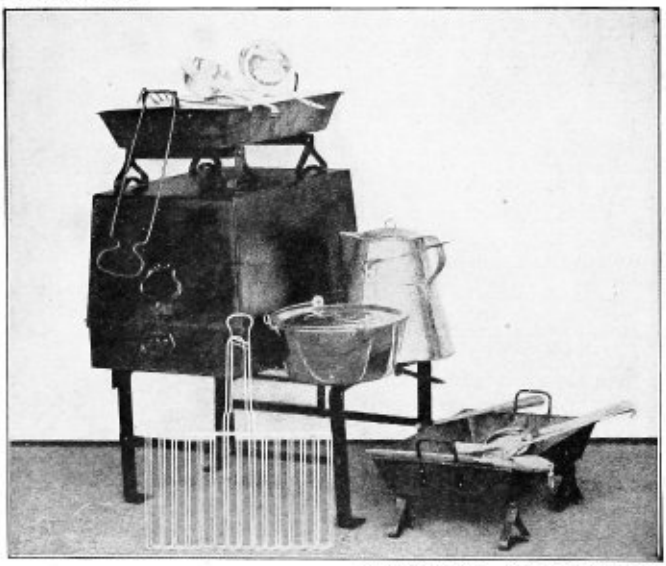
In shipping order
Size 14½ x 10½ x 8 inches

REGULAR SIZE. FOR SIX PERSONS

Regular Kamp Kook Kit (21 pieces), weight 15 lbs. $8.50
Regular Table Ware (33 pieces), weight 5 lbs. 2.50
Regular Kit and Table Ware (54 pieces), weight 20 lbs. 11.00

Kit consists of Fire Jack, Dish Pan, Boiler, Frying Pan, Coffee Pot, Cover, Adjustable Handle, Broiler, two Ladles, Cake Turner, Basting Spoon, Fork, Can Opener, Pot Cleaner, Towel, Match Box, Flour Dredge, Salt and Pepper Boxes, Candle Lantern.

Table Ware consists of six each, Knives, Forks, Tea Spoons, Tin Cups, Tin Plates, two Table Spoons, one Butcher Knife.



In shipping order
Size 53½ x 17 x 12½

SQUAD SIZE. FOR TWELVE PERSONS

Squad Size Kamp Kook Kit (28 pieces), weight 60 lbs. $24.00
Squad Size Table Ware (64 pieces), weight 10 lbs. 5.00
Squad Size Kit and Table Ware (92 pieces), weight 70 lbs. 29.00

Kit consists of Fire Jack, two Pans, two Dripping Pans, two Covers, two Adjustable Lifters, Coffee Pot, Kettle, four Horses for Pan Supports, Knife, Steel, Dipper, Ladle, Cake Turner, Basting Spoon, Fork, Flour, Salt and Pepper Dredges, Pot Cleaner, Can Opener, Match Safe.

Table Ware consists of twelve each, Knives, Forks, Tea Spoons, Cups and Plates, four Table Spoons.

PATENT CAMP STOVES

These Stoves are Made from No. 20-Gauge Sheet and Fully Warranted

They are indestructible. These stoves cost only about one quarter as much as a cast iron stove, and will do the work much quicker and better. They will not break or bend. They are light and easy to handle. You can cook, bake, roast, broil and heat, no matter what condition of weather. Biscuits can be baked with one of these in 15 minutes. They burn anything except coal.

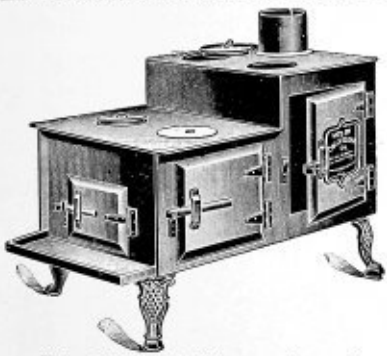
THE SPORTSMAN'S FRIEND

The Sportsman's Friend is a folding stove fitted together with such exactness that it takes only a minute to take it apart and prepare it for traveling, while it can be put together ready for use in the same length of time. The stove is large enough to supply all the cooking necessary for a party of fifteen people.

It is packed in a neat pine box, 4 inches high, 32 inches long, and 17 inches wide. This stove is 29 inches long, 17 inches wide, 16 inches back of oven, and 10 inches high at fire place, when standing on legs ready for use; total height, 23 inches. The oven is 10x10 inches square and 17 inches deep.

Full iustructions with each stove in regard to putting them together. Weight of stove, 42 lbs.; crated, 60 lbs. Each $16.50

Cut Showing it Ready for Use and Folded Ready for Traveling



THE SPORTSMAN'S DELIGHT

The size of this stove is 29 inches long, 17 inches wide, 16 inches high back of the oven, and 11 inches high in the fireplace. These dimensions do not include height of legs. The legs are 7 inches long, making the stove in all 23 inches high when in use.

The pipe hole is for 5-inch pipe, and the cooking holes are 5 inch. The oven is 10 inches wide, 11 inches high, and 17 inches deep.

Every cooking hole on top of stove is protected with a cast iron ring ¼-inch thick by 1½ inches wide, riveted firmly on inside of each hole. There is also a damper attachment which regulates the heat by three movements. The legs are detachable and can be packed inside of stove, and at the same time all the cooking utensils can be put inside the stove. Weight of stove, 50 lbs.; crated 70 lbs. Each..$13.50

THE "LITTLE PET"

The "Little Pet" is small, easily supplies the desires and wants of small camping parties, such as individual hunters or small families. These stoves are manufactured in two ways, one of which can be folded as shown in cut, and one which does not fold, but can be carried as conveniently as a valise.

This stove occupies a space 23 inches in length, 12 inches high and 12 inches wide. The oven is 8x8 inches square by 12 inches deep. The stove is 18 inches high when standing on its legs, is packed in a box ready for use. The box is 4 inches high, 27 inches long and 14 inches wide. This stove has two cooking holes, each 5 inches, and a pipe hole for a 5-inch standard pipe. Weight of stove, 25 lbs.; crated, 35 lbs.

Folding stove, each $13.50
Non-folding stove, each 10.00
Pipe (telescopic), 6 lengths 15 inches long 1.75

Cut Showing Stove Ready for Use and Folded Ready for Traveling

HAPPY ROVER STOVE

will burn all kinds of fuel. Are made of steel plates. Flues can be readily cleaned. Six feet of telescoped pipe, a tin tent protector and wrought iron legs are included with every stove, which pack into bake oven, leaving the fire-box for utensils. Made in two sizes.

No. 24. 14x24x10 in. high, wt. 34 lbs. Ea. $10.00
No. 30. 14x30x14 " " " 38 " " 12.00

SIBLEY HEATING STOVES

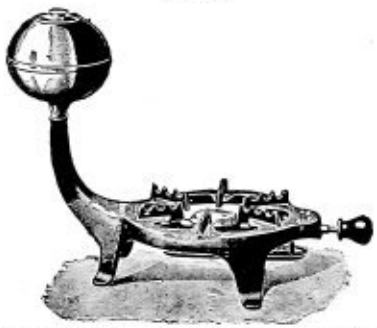
The only stove to use for heating. Has no bottom. Burns everything. 18 inches diameter at base; 4 inches diameter at top. Height, 28 inches. Including 9 foot pipe, each.... $5.00

BARTHEL'S ALCOHOL STOVE

Perfect Combustion — Minimum Consumption — Absolutely Safe

These alcohol stoves are dependent upon gravity alone to supply the required pressure for correct combustion. We are therefore enabled to dispense with the pump or bulb. In fact there is nothing to get out of order, and with ordinary care these little stoves will last a lifetime.

"NORMA"



Weighs 3¾ pounds. Holds 1 pint. Burns, single charge, full flame, 2 hours; from 5 to 6 hours, moderate flame. A quart of water at 15° C. boils in from six to seven minutes.

The "Norma" alcohol stove is of high efficiency, easily and quickly started, and easily regulated. Gives a perfect flame. All parts readily accessible, so that after long use it can be taken apart and cleaned.

Enamel	each	$2.50
Nickel Plated	"	3.50
With Wire Rail for boats, etc	extra	.50

"NORMA" No. 2

Has two burners as shown in cut, and weighs about 6 pounds. Holds 1 quart and burns, single charge, 2 hours with full flame, and from 5 to 6 hours with moderate flame. Each flame is of the same efficiency as that of the single burner stove.

Enamel	each	$5.00
Nickel Plated	"	7.00
With Wire Rail for boats, etc	extra	1.00

BARTHEL'S KEROSENE STOVES

No. 6-A

Capacity of reservoir, 3 pints. Burns 1 quart full flame three hours. Boils 1 quart water at 15° in five minutes. Weight, 3½ pounds.

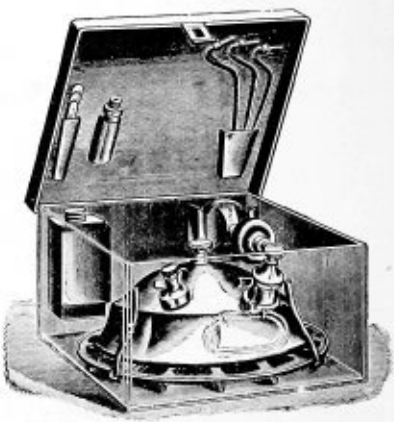
With polished brass reservoir and removable feet.. each $3.75

COOKER FOR STOVE

Feet screw off for packing. As illustrated, can be used for cooking five pots. Weight, 14 pounds.

Cooker		$3.50
" complete with Stove..		7.25
Galvanized, with Brass Rail	extra	1.00

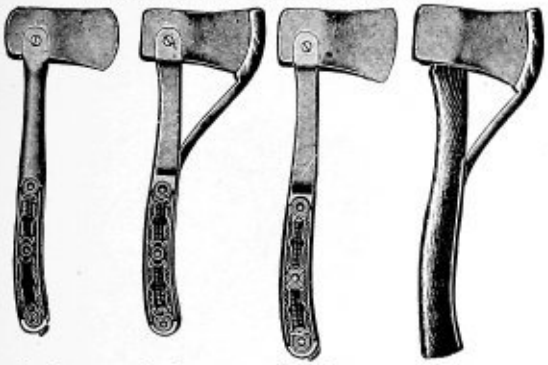
No. 6-A IN CASE



This case is made of sheet metal. It enables the shipping of the stove in a secure manner. A can for alcohol is included in the outfit. Weight, 6 pounds.

Price, including stove, complete..... each $5.00

MARBLE'S SAFETY AXES



No. 1 No. 2 No. 3 No. 4

No. 1. Weight, 16 oz., 10 in. steel, hard rubber handle ..... each $2.50
No. 2. Weight, 16 oz., same as No. 1, except head differently attached ..... each 2.50
Fo. 3. Weight, 27 oz., same as No. 1 ..... each 3.00
No. 4. Weight, 20 oz., a good axe for the money, each 1 50

THE SPORTSMAN'S IDEAL HUNTING KNIFE

Style No. 1.—Is put up with laminated leather handle, with brass and fiber trimmings, with polished stag horn tip.

Style No 2.—Is put up with the body of the handle of polished German stag with fiber and brass trimmings at each end of handle and polished stag horn tip.

With handle, Style No. 1:
Blade, 5 inch ..... each $2.25
" 6 " ..... " 2.50
" 7 " ..... " 2.75
" 8 " ..... " 3.00

With handle, Style No. 2:
Blade, 5 inch ..... each $2.75
" 6 " ..... " 3.00
" 7 " ..... " 3.25
" 8 " ..... " 3.50

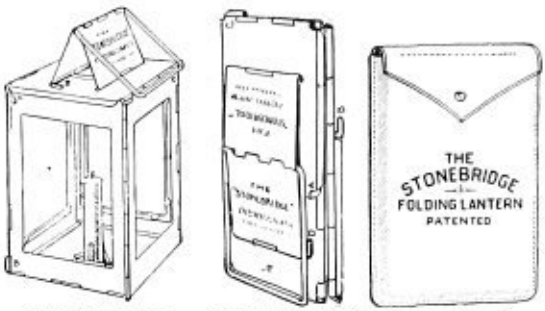
No. 1 No. 2

YACHTMAN'S KNIFE

For a camper this knife is perfect. It nas a hand forged steel blade and bone handle, combining strength with compactness. It is 10½ inches long when opened.
Each $1.50

AUTOMATIC FOLDING LANTERN

SIMPLICITY, LIGHTNESS, COMPACTNESS



Lantern Open Lantern Folded Case Closed

Size, open ..... 6 x 4 x 4 inches
" closed ..... 6 x 4½ inches
Always use hard candle.
Aluminum, clear mica slides ..... each $2.00
Tinned Steel Plate (copper oxidized finish), clear mica slides ..... each 1.50
Sole Leather Case with candle pocket ..... " .75

MARBLE'S COMPASS AND BRACKET

No. 1. Jewel capped needle, revolving celluloid dial ..... each $1.50
No. 2. Jewel capped needle, stationary card dial ..... each 1.25
No. 3. Plain needle, without jewel, stationary dial ..... each 1.00

PLAIN COMPASSES, WATERPROOF SCREW CASES

No. 4. Plain needle, stationary dial, without bracket ..... each .75
No. 5. With jewel capped needle, stationary dial, without bracket ..... each 1.25

THERMOS BOTTLES

This bottle is guaranteed to keep contents hot for 24 hours in coldest climate. Will keep contents cold for 72 hours. For campers, picnickers, etc., it is the only way to carry liquids.

		Pint Capacity	Quart Capacity
No. 4.	Leather and Nickel ..... each	$5.00	$8.15
No. 6.	All Nickel ..... "	4.70	7.20
No. 8.	Black Morocco ..... "	5.95	8.75

DUPLEX BASKETS AND PAILS

Open

Duplex Baskets are thoroughly waterproof and have japanned mountings. Double handles and covers.

Folded

Nos.	Style	Length	Width, in.	Depth, in.	Folds into in.	Each
316	Oblong	16	9½	7½	10x8x2½	1.75
318	Oblong	18	11	9½	12x9x2½	2.25

Duplex Basins are made of waterproof canvas sides and pantasote bottom. Japanned mountings.

Folded

Open

Nos.	Style	Dia., in.	Depth, in.	Folds into in.	Each
112	Wash Basin	12	5½	12x7x1¾	$1.00
114	Dish Pan	14	7½	14x8x2	1.50
116	Foot Tub	16	9½	16x9x2½	2.00

Open

Duplex Tubs are made of pantasote throughout with japanned mountings.

Folded

Nos.	Style	Dia., in.	Depth, in.	Folds into in.	Each
218	Round	18	9½	18x10x2½	$3.50
222	Round	22	9½	22x12x2½	4.25
225	Round	25	9½	25x14x2½	5.00

Duplex Pails. No. 5 has splash guard strainer and spout. All have wire handles and japanned mountings.

Folded

Open

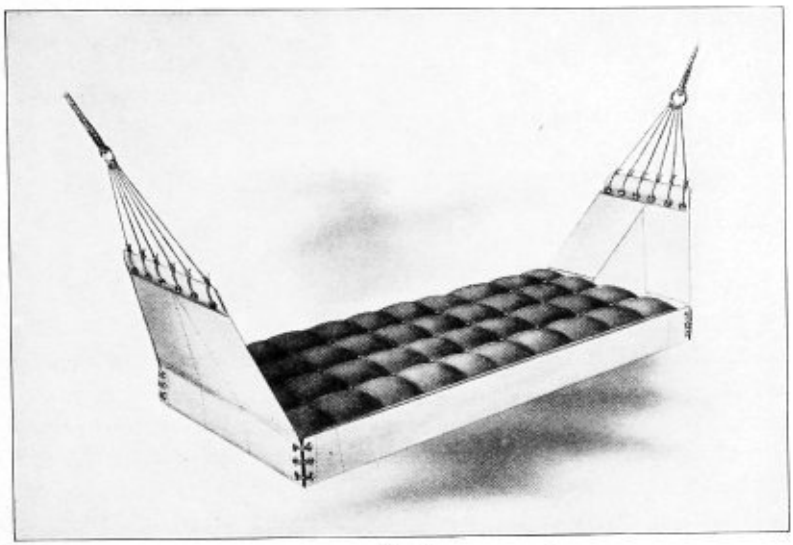
Nos.	Capacity in Quarts	Dia., in.	Depth, in.	Folds in Space, in.	Each
4	6	10	7½	11½x5½x2	$1.00
10	8	10	7½	12½x5½x2½	1.25
12	10	11	9½	13½x6 x2½	1.50
5	10	11	9½	13½x6 x2½	2.00

HAWKEYE REFRIGERATOR BASKETS

Nos.	Length, inches	Width, inches	Depth, inches	Each
0	14	9	7	$3.00
1	18	10	8	3.50
2	20	13	10	3.75

SPANISH PORCH HAMMOCKS

The old Spanish hammock with Yankee improvements. To state Spanish means comfort. It is made of 18 ounce cotton duck, fitted with grommets and manila rope. Finished in best manner. Has wood frame and 4 inch thick cotton felt duck covered cushion. We make it in brown and green duck. Body is 6 feet long and 2 feet 4 inches wide.

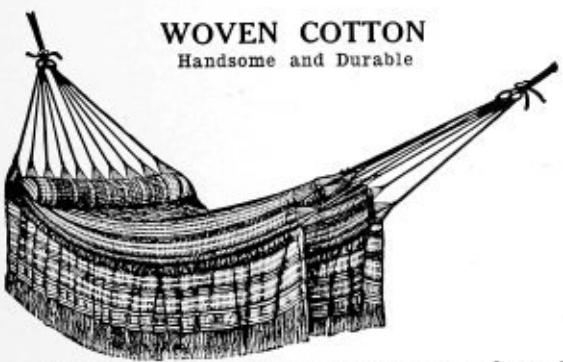


No. 1

Brown Duck, with cushion.....Each $15.00
Green " " " ..... " 15.00

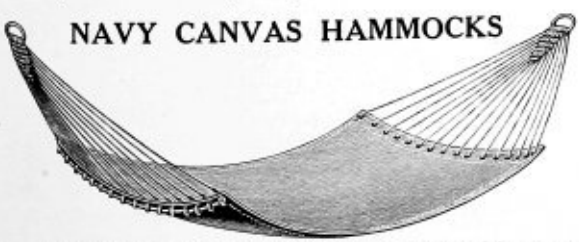
WOVEN COTTON

Handsome and Durable



We carry a complete stock of hammocks and attachments, and will send special price list upon request.

NAVY CANVAS HAMMOCKS



Made of No. 6 heavy brown duck, finished by practical sail-makers. Size of body, 36x80 inches.

Price.....each, $4.00

PEERLESS ADJUSTABLE HAMMOCK CHAIR

It is comfortable, light weight, only 5 pounds, strong and durable brown duck.

Price.....each, $6.00

RUBBER GOODS

The Policy of the PEERLESS RUBBER MFG. CO., "Quality maintained under any and all conditions," has placed this company without a peer in the manufacture of Mechanical Rubber Goods.

GEO·B·CARPENTER & CO.
General Western Agents

HINTS ON THE USE OF RUBBER BELTING

Precaution should be used in arranging pulleys and shafting, in order to obtain the full power and the full service.

The diameter of the pulleys should be as large as it is possible to have them, as a belt stretches on the outside, while on the inside it compresses.

In comparison with a leather belt, 4-ply rubber is equivalent to a single leather belt; 6-ply rubber is equivalent to a double leather belt.

The belt, before adjusted to the pulley, should be cut shorter than the distance around the pulleys by one-eighth to one-quarter of an inch for every foot, when measured with a tape or string.

In narrow belts, butt the two ends together, making two rows of holes in each, and lace with lacing.

On wide belts, in addition, sew on a thin piece of rubber or leather, to strengthen the joints.

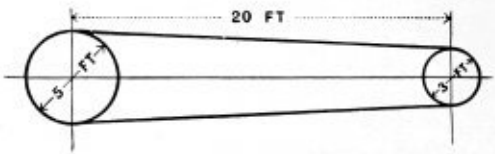
The seam side of the belt should always be placed outside and not next to the pulleys. In case the belt slips, which occurs very seldom, it is best to coat the side next to the pulley lightly with boiled linseed oil.

Grease and all animal oils are injurious to rubber belts. Especial care should be taken to protect the edges from them, as they are liable to decompose the belt.

TO FIND THE LENGTH OF A BELT

When pulleys are small or about the same diameters, add the diameters of the two pulleys together, divide the result by two, and multiply the quotient by three and one-seventh. Add the product to twice the distance between the centers of shafts, and you have the length required.

EXAMPLE



5 ft. diam. one pulley.
3 " " "
2)8 sum of diameters.
4 = 1/2 sum.
3 1/7
12.57 ft.

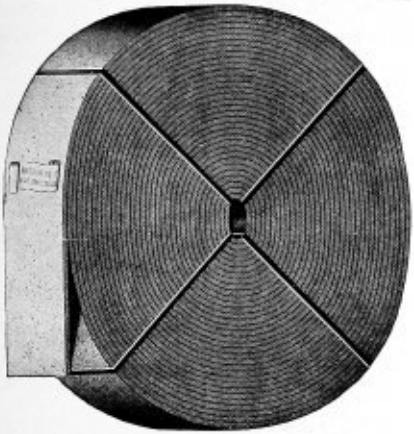
20 ft. distance between centers.
2
40 ft.
12.57
52.57 ft. = 52 ft. 6 7/8 in., length of belt.

In putting on belting it should be stretched as tightly as possible, and with wide belts this can best be done by the use of clamps secured firmly to each end of the belt and drawn together by clamp rods running parallel with and outside the edges of the belt. There is no danger of breaking, as a belt six inches wide and 3-ply thick will stand a direct strain of 5,000 pounds, and other sizes in proportion.

PEERLESS RUBBER MFG. CO.'S BRANDS

RUBBER BELTING

All Belts Bear Labels every 25 Feet



RAINBOW FRICTION SURFACE RUBBER BELTING

The strongest and most flexible rubber belt in the market. Made on special extra heavy duck from the finest Texas pickings.

Each belt stretched on our own patent stretcher. Every belt has a guaranteed friction test of 22 lbs. This is just the belt for high speed work or for use on small pulleys, or for extra hard work.

STITCHED BELTING

Stitched belt was put on the market some years ago to meet the demands of certain operators of paper and flour mills, elevators, etc., who were strong advocates of stitching in belt making.

The enviable reputation of this belt was gained from the fact that we use a high-grade of Para rubber and carefully selected extra heavy duck. We do not depend upon the stitching alone to hold the plies, as do most manufacturers of stitched belting.

PEERLESS RUBBER BELTING

Patent Stretched

Made from high-grade, extra heavy cotton duck, and prime stock throughout.

This brand of belting is superior to the highest grade of other makes.

The extra care and attention given to the manufacture of this belt has resulted in its wonderful success.

DURHAM RUBBER BELTING

This is a good grade of belting, carefully and honestly made, and will give excellent satisfaction for ordinary use. We guarantee all belts straight, uniform in thickness and width, with perfectly smooth surfaces.

Rolls contain about 400 ft. For List Prices on Rubber Belting, see page 314.

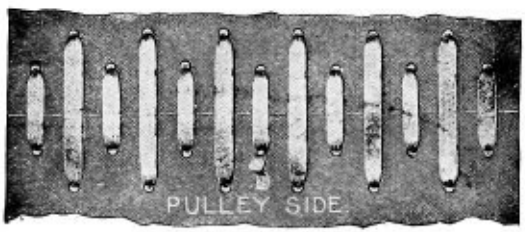
LIST OF RUBBER BELTING

Inch	2-Ply	3-Ply	4-Ply	5-Ply	6-Ply	7-Ply	8-Ply	Inch	2-Ply	3-Ply	4-Ply	5-Ply	6-Ply	7-Ply	8-Ply
1	$0.07	$0.09	$0.11	.....	.....	.....	.....	18	$1.41	$1.70	$2.02	$2.52	$3.03	$3.53	$4.04
1¼	.09	.11	.13	.....	.....	.....	.....	20	1.58	1.90	2.26	2.82	3.39	3.95	4.52
1½	.11	.13	.15	$0.19	.....	.....	.....	22	1.76	2.12	2.52	3.15	3.78	4.41	5.04
1¾	.13	.15	.17	.21	.....	.....	.....	24	1.96	2.36	2.80	3.50	4.20	4.90	5.60
2	.15	.17	.21	.26	$0.31	.....	.....	26	2.16	2.60	3.08	3.85	4.62	5.39	6.16
2½	.18	.22	.26	.32	.39	.....	.....	28	2.36	2.84	3.36	4.20	5.04	5.88	6.72
3	.22	.26	.31	.38	.46	.....	.....	30	2.56	3.08	3.64	4.55	5.46	6.37	7.28
3½	.26	.30	.37	.46	.55	.....	.....	32	2.76	3.32	3.92	4.90	5.88	6.86	7.84
4	.30	.34	.42	.52	.63	$0.73	.....	34	2.96	3.56	4.20	5.25	6.30	7.35	8.40
4½	.33	.39	.47	.58	.70	.82	.....	36	3.16	3.80	4.48	5.60	6.72	7.84	8.96
5	.36	.43	.52	.65	.78	.91	.....	38	3.36	4.04	4.76	5.95	7.14	8.33	9.52
6	.43	.52	.62	.77	.93	1.08	$1.24	40	3.56	4.28	5.04	6.30	7.56	8.82	10.08
7	.51	.60	.73	.91	1.09	1.27	1.46	42	3.76	4.52	5.32	6.65	7.98	9.31	10.64
8	.59	.70	.84	1.05	1.26	1.47	1.68	44	3.96	4.76	5.60	7.00	8.40	9.80	11.20
9	.67	.80	.95	1.18	1.42	1.66	1.90	46	4.16	5.00	5.88	7.35	8.82	10.29	11.76
10	.75	.90	1.07	1.33	1.60	1.87	2.14	48	4.36	5.24	6.16	7.70	9.24	10.78	12.32
11	.83	1.00	1.18	1.47	1.77	2.06	2.36	50	4.56	5.48	6.44	8.05	9.66	11.27	12.88
12	.91	1.08	1.30	1.62	1.95	2.27	2.60	52	4.76	5.72	6.72	8.40	10.08	11.76	13.44
13	1.00	1.18	1.42	1.77	2.13	2.48	2.84	54	4.96	5.96	7.00	8.75	10.50	12.25	14.00
14	1.08	1.28	1.54	1.92	2.31	2.69	3.08	56	5.16	6.20	7.28	9.10	10.92	12.74	14.56
15	1.16	1.38	1.66	2.07	2.49	2.90	3.32	58	5.36	6.44	7.56	9.45	11.34	13.23	15.12
16	1.25	1.50	1.78	2.22	2.67	3.11	3.56	60	5.56	6.68	7.84	9.80	11.76	13.72	15.68

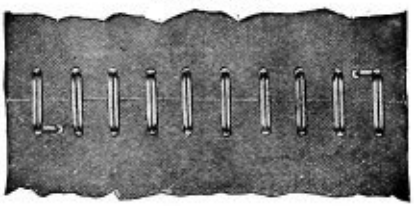
All other widths and plies at proportionate prices.

BEST METHOD OF LACING BELTING

The belt to be adjusted to the pulleys (depending on the thickness of the belt) should be cut shorter than the distance around the pulleys by 3-16 to 1-4 of an inch for every foot in length, when measured with a metallic tape or wire drawn tightly around the pulleys.



Wire Lacing

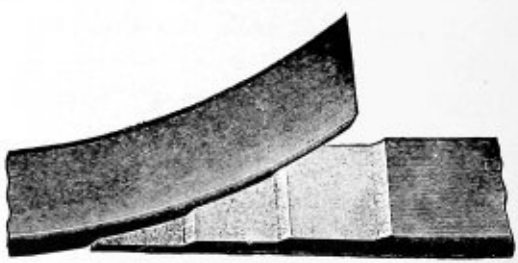


Pulley Side

Outside

METHOD OF CUTTING A LAP SPLICE

Cover both scarfed surfaces with rubber cement, and when dry bring the two ends together so that they fit each other properly; roll or pound them firmly together, and then punch carefully and sew through and through with narrow lace leather.



PRACTICAL SUGGESTIONS AND INFORMATION FOR USERS OF LEATHER BELTING

Avoid overloading your belts, and do not run them tighter than is necessary. More than three-fourths of the trouble experienced in broken pulleys, hot journals, etc., can be properly charged to the belts being too tight. The extraordinary pressure thus put upon the pulleys must in time break them, or cause the bearings to be destroyed from overheating.

In the location of shafts that are to be connected with each other by belts, care should be taken to secure a proper distance, one from the other. As a general rule, where narrow belts are to be run over small pulleys, 15 feet is a good average. For wide belts, on larger pulleys, a distance of 20 to 25 feet apart.

It is desirable that the angle of the belt with the floor should not exceed 45 degrees.

If absolutely necessary to run a belt perpendicular, it should be made of well stretched leather, and kept very tight.

Belts should be kept clean and free from accumulations of dust and grease, and especially from contact with lubricating oils, some of which particularly injure the leather, causing the grain to peel off in spots of from two to six inches in diameter.

Keep your belts well protected from water and all moisture, and occasionally give them an application of some good dressing which will preserve the leather and make it soft and pliable. Dixon's Leather Belt Dressing is something we can recommend very highly for this purpose. See page 389.

The power of a double belt is as 10 to 7 in comparison with a single belt.

Tighteners should be placed on the slack side of belts and near the smallest pulley. Care must be used not to place them too near, as in that case, when the belt becomes slack, the turn would be too short and crack the belt.

Fast-running belts should be made endless, if practicable.

The pulleys should always be just a little wider than the required belt.

Pulleys should be as large in diameter as conditions will possibly allow; more power is thereby obtained, and the life of the belt prolonged.

Where trouble is experienced with slipping, the same can be reduced to a minimum and about one-third more power obtained by covering the pulley with leather. It is the best wearing cover that can be put on.

In shortening endless belts, adjust the clamps so that they are at perfect right angles with the edge of the belt. In drawing up the rods, keep the strain equal on each side. When shortened the desired amount, open the lap with a screwdriver and hammer. Scrape off all the old cement. Shortening can be done on the tongue lap the first two or three times, but after that the mouth lap may have to be shortened in order to maintain the equal thickness of the belt. Keep the cement hot and apply quickly, as it will not hold if allowed to chill. On large belts it is best to cement only a portion at a time. Smooth the lap down nicely by hand, then place a block of wood on the leather and hammer thoroughly the entire cemented portion. By nailing strips across the clamps for supports, a platform can be placed under the belt, on which this work can be done. After an hour or two the strain on the clamps can be relieved somewhat, and the belt allowed to dry as long as convenient.

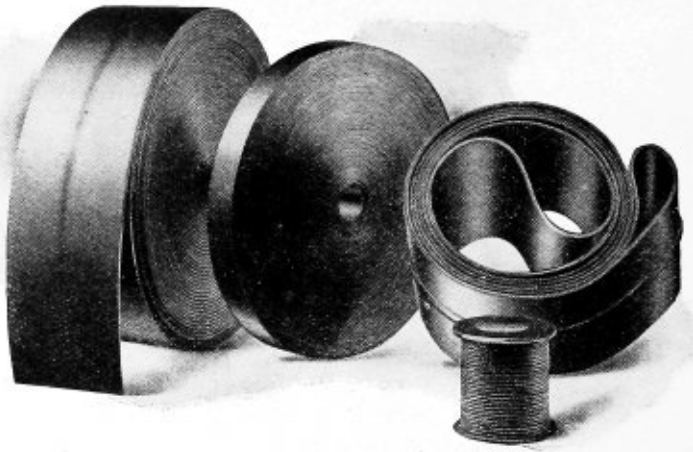
IMPORTANT—GIVE EXACT TAPE-LINE MEASUREMENT

Do not try to avoid shortening your belts after being run awhile by shrinking the measurement when ordering, and then having to force them on the pulleys.

No one can tell the exact stretch of a piece of leather, and a belt will almost invariably become crooked at the point where it is forced on, owing to the unusual strain on a limited space, and the manufacturer is then accused of furnishing a belt with a spongy spot in it.

Care in this regard will save trouble for all concerned.

LEATHER BELTING



BEST QUALITY AND SHORT LAP BRANDS
Price List Adopted November 21, 1906

Width inches	Single List	Once and a Half List	Double List	Width inches	Single List	Double List	3-Ply List
½	$0.12	$0.18	$0.24	14	$3.36	$6.72	$10.08
⅝	.15	.23	.30	15	3.60	7.20	10.80
¾	.18	.27	.36	16	3.84	7.68	11.52
⅞	.21	.32	.42	17	4.08	8.16	12.24
1	.24	.36	.48	18	4.32	8.64	12.96
1¼	.30	.45	.60	19	4.56	9.12	13.68
1½	.36	.54	.72	20	4.80	9.60	14.40
1¾	.42	.63	.84	21	5.04	10.08	15.12
2	.48	.72	.96	22	5.28	10.56	15.84
2¼	.54	.81	1.08	23	5.52	11.04	16.56
2½	.60	.90	1.20	24	5.76	11.52	17.28
2¾	.66	.99	1.32	25	6.00	12.00	18.00
3	.72	1.08	1.44	26	6.24	12.48	18.72
3¼	.78	1.17	1.56	27	6.48	12.96	19.44
3½	.84	1.26	1.68	28	6.72	13.44	20.16
3¾	.90	1.35	1.80	30	7.20	14.40	21.60
4	.96	1.44	1.92	32	7.68	15.36	23.04
4½	1.08	1.62	2.16	34	8.16	16.32	24.48
5	1.20	1.80	2.40	36	8.64	17.28	25.92
5½	1.32	1.98	2.64	38	9.12	18.24	27.36
6	1.44	2.16	2.88	40	9.60	19.20	28.80
6½	1.56	2.34	3.12	44	10.56	21.12	31.68
7	1.68	2.52	3.36	48	11.52	23.04	34.56
8	1.92	2.88	3.84	52	12.48	24.96	37.44
9	2.16	3.24	4.32	54	12.96	25.92	38.88
10	2.40	3.60	4.80	56	13.44	26.88	40.32
11	2.64	3.96	5.28	60	14.40	28.80	43.20
12	2.88	4.32	5.76	68	16.32	32.64	48.96
13	3.12		6.24	72	17.28	34.56	51.84

SOLID

Size	Price
⅛ inch	$0.05
3-16 "	.07
¼ "	.10
5-16 "	.14
⅜ "	.18
½ "	.30
⅝ "	.36
¾ "	.46

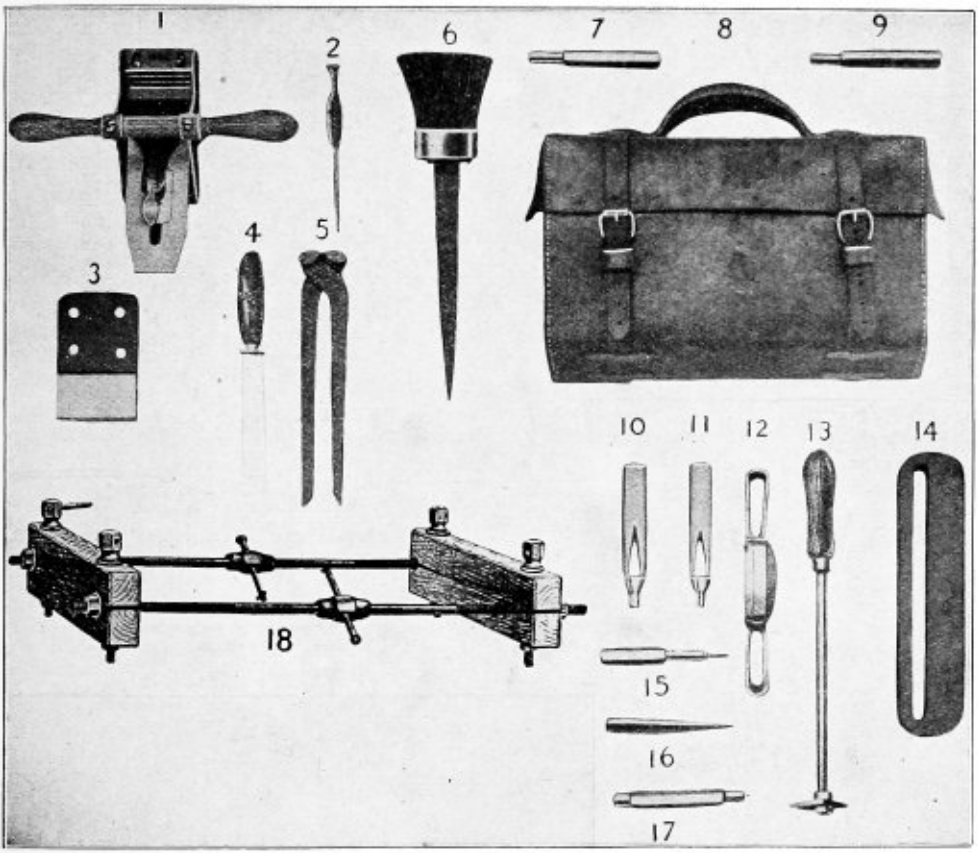
TWISTED

Size	Price
⅛ inch	$0.06
3-16 "	.10
¼ "	.14
5-16 "	.18
⅜ "	.22
½ "	.30
⅝ "	.36
¾ "	.46
⅞ "	.60
1 "	.72

BELT MAKERS' TOOLS

For Repairing and Making Belts Endless

Something Every Plant Using Belting Should Have



Order by Number

No. 1.	Belt Plane for making Laps	each	$3.00
2.	Finger Steel for sharpening Scraper No. 3	"	.35
3.	Belt Scraper	"	.60
4.	Belt Knife	"	.25
5.	Nippers for cutting rivets	"	1.25
6.	Glue Brush, 2¼ inch	"	2.25
7.	Copper Rivet Set	"	.75
8.	Leather Tool Bag	"	8.75
9.	Coaxer for forcing on Burrs before setting	"	.65

		For Belts	6 to 14 in.	12 to 18 in.	18 to 24 in.	24 to 36 in.
No. 18.	Belt Clamps	Each	$8.00	$10.00	$12.00	$18.00

No. 10.	$\frac{5}{16}$ Lace Punch	each	$1.00
11.	$\frac{3}{8}$ " "	"	1.00
12.	Heel Shave for making Laps	"	1.00
13.	Three Corner Scraper for removing Glue from old Belts	each	1.00
14.	Iron for setting and knocking out Rivets	"	1.50
15.	Drive Punch	"	.75
16.	Solid Punch	"	.75
17.	Tubular Rivet Set	"	1.25

GLUE HEATER

(Kerosene)

Made of Heavy tin, wire re-inforced in legs. We carry in stock either with heavy tin pail and cup, numered 1, 2, and 3, or with pail and cup of copper, numbered 10, 20 and 30.

No. 1.	1 Pint, Tin Pail and cup	each	$1.15
2.	2 Pint, Tin Pail and cup	each	1.20
3.	3 Pint Tin Pail and Cup	each	1.25
10.	1 Pint Copper Pail and Cup	each	1.40
20.	2 Pint, Copper Pail and Cup	each	1.50
30.	3 Pint, Copper Pail and Cup	each	1.60

DIXON'S LEATHER BELT DRESSING

Prevents Slipping. Increases Power

1 lb. Sticks, 25 to Case		per case	$6.00
1 " "		each	.30
10 " Cans		per lb.	.35
25 " "		"	.25

PURE LEATHER CEMENT

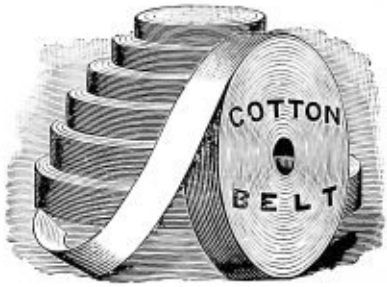
Price per lb. $1.00

DIRECTIONS.—To prepare the Cement for use, cut in small pieces. Set pot in boiling water, which will dissolve it. If too thick, add small quantity of water. Apply with brush lightly to laps of belt and stick together before cement becomes chilled. Rub lap down thoroughly and let it set an hour before running belt.

PEERLESS RUBBER CEMENT

Half pint cans	per doz.	$3.60
Pint cans	"	7.20
Quart cans	"	14.40
One gallon cans	each	4.00

COTTON BELTING



Directions for Lacing Cotton Belting

With a tri-square cut the ends of the belt perfectly true. Do not cut the fabric, but use a large awl in making the holes. There should be in each end of the belt two rows of holes placed zigzag. The edge of no hole should come nearer to the sides of the belt than three-quarters of an inch, and not nearer the end than seven-eighths of an inch.

Per Foot

Size inches	2-Ply	3-Ply	4-Ply	5-Ply	6-Ply	8-Ply
1	$0.04	.....	.....	.....	.....	.....
1½	.05	$0.06	.....	.....	.....	.....
2	.06	.08	$0.12	.....	.....	.....
2½	.06½	.10	.14	.....	.....	.....
3	.07	.12	.16	.....	.....	.....
3½	.08	.14	.18	.....	.....	.....
4	.09	.15	.21	$0.34	.....	.....
4½	.11	.17	.24	.36	.....	.....
5	.13	.19	.26	.38	.....	.....
5½	.15	.21	.28	.40	.....	.....
6	.17	.23	.30	.42	$0.46	$0.75
7	.19	.27	.34	.45	.51	.83
8	.21	.31	.38	.50	.57	.91
9	.23	.35	.44	.56	.66	1.03
10	.26	.39	.50	.63	.75	1.15
11	.30	.45	.55	.69	.....	.....
12	.33	.48	.60	.75	.90	1.35
14	.41	.60	.75	.94	1.12	1.65
16	.49	.72	.90	1.12	1.35	1.95
18	.57	.82	1.00	1.28	1.50	2.13
20	.61	.90	1.15	1.44	1.72	2.33
22	.65	1.00	1.35	1.62	1.94	2.60
24	.69	1.10	1.55	1.80	2.16	2.85
26	.....	.....	1.75	2.00	2.36	3.15
28	.....	.....	1.90	2.15	2.60	3.35
30	.90	.....	2.10	2.35	2.85	3.60
36	.....	.....	2.60	.....	.....	.....

STITCHED CANVAS BELTING

LIST, JANUARY, 1904
Per Foot

4-Ply Equal to Single Leather		5-Ply		6-Ply Equal Light Dbl. Leather		8-ply Equal Heavy Dbl. Leather		10-Ply	
1 inch	$0.10	2 inch	$0.25	2 inch	$0.29	3 inch	$0.57	12 inch	$2.82
1¼ "	.13	2½ "	.31	2½ "	.36	4 "	.76	14 "	3.45
1½ "	.15	3 "	.38	3 "	.44	5 "	.95	15 "	3.71
1¾ "	.18	3½ "	.44	3½ "	.51	6 "	1.14	16 "	3.95
2 "	.20	4 "	.50	4 "	.58	7 "	1.33	18 "	4.44
2¼ "	.23	4½ "	.56	4½ "	.65	8 "	1.52	20 "	4.94
2½ "	.25	5 "	.63	5 "	.73	9 "	1.71	22 "	5.43
2¾ "	.28	6 "	.75	6 "	.87	10 "	1.90	24 "	5.92
3 "	.30	7 "	.88	7 "	1.02	11 "	2.09	26 "	6.72
3½ "	.35	8 "	1.00	8 "	1.16	12 "	2.28	28 "	7.24
4 "	.40	9 "	1.13	9 "	1.31	13 "	2.60	30 "	7.76
4½ "	.45	10 "	1.25	10 "	1.45	14 "	2.79	32 "	8.27
5 "	.50	11 "	1.38	11 "	1.60	15 "	3.00	34 "	8.79
6 "	.60	12 "	1.50	12 "	1.74	16 "	3.19	36 "	9.31
7 "	.70	13 "	1.71	13 "	1.99	18 "	3.59	38 "	9.82
8 "	.80	14 "	1.84	14 "	2.13	20 "	3.99	40 "	10.34
9 "	.90	15 "	1.98	15 "	2.29	22 "	4.39	42 "	11.84
10 "	1.00	16 "	2.10	16 "	2.44	24 "	4.79	44 "	12 41
11 "	1.10	18 "	2.36	18 "	2.74	26 "	5.43	48 "	13.54
12 "	1.20	20 "	2.63	20 "	3.05	28 "	5.85	50 "	14.10
13 "	1.37	22 "	2.89	22 "	3.35	30 "	6.27	52 "	14.66
14 "	1.47	24 "	3.15	24 "	3.65	32 "	6.69	54 "	15.23
15 "	1.58	.....	.....	26 "	4.15	36 "	7.52	56 "	15.79
16 "	1.68	.....	.....	28 "	4.47	40 "	8.36	60 "	16.92
18 "	1.89	.....	.....	30 "	4.79	48 "	10.94	.....	.....

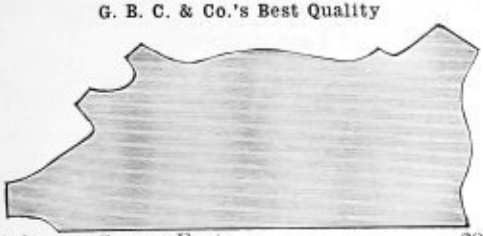
COTTON SAND BELTING

Heavy Single Ply. Per Foot

2 inch	$0.02½	5 inch	$0.05	10 inch	$0.10	18 inch	$0.15
3 "	.03	6 "	.06	12 "	.11	20 "	.16
4 "	.04	7 "	.07	14 "	.12	22 "	.18
4½ "	.04½	8 "	.08	16 "	.13	24 "	.20

Rawhide Belting. Use Oak Tanned Leather List. See page 316.

LACE LEATHER
G. B. C. & Co.'s Best Quality



In Sides, per Square Foot.....$0.30

CUT LACINGS

1/4 inch	per 100 feet.		$1.25
5/16 "	" 100	"	1.50
3/8 "	" 100	"	1.75
1/2 "	" 100	"	2.25
5/8 "	" 100	"	3.00
3/4 "	" 100	"	3.75

COMPOSITION WIRE BELT LACING

No. 0.	For belts from 1 to 2½ inches. per 100 feet.,		$2.00
" 1.	" single belts 5 inches and under.	" 100 "	2.00
" 2.	" all single belts wider than 5 inches and double under 8 inches.	" 100 "	2.00
" 3.	" all double belts wider than 8 inches.	" 100 "	2.00

TOOLS FOR LACING
BELT PUNCH, NICKEL PLATED

Each.....$0.75

CUTTERS AND PLIERS, NICKEL PLATED

Each.....$0.75

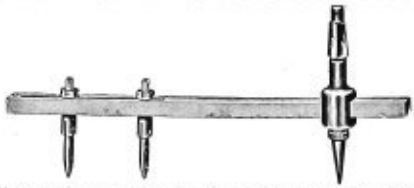
BELT GROOVER

Each.....$0.50

BELT MARKER

Each.....$0.25
Set — Punch, Groover, Cutters and Pliers.....$1.50
Set — Punch, Special Groover, Cutters and Pliers and Belt Marker.....$2.00

CENTURY GASKET AND WASHER CUTTER



Will cut Gaskets up to 24 inches outside diameter; can be used with bit brace, drill press, or by hand.
Nickel plated.....each, $3.00

IMPROVED BELT PUNCH AND LACE CUTTER
Or Splicing Tool (Combined)

It does the work of two. Cuts the Lace Leather, puches the hole in the belt, and draws the lace through.
Each.....$1.00

L X IMPROVED BELT PUNCH
Or Splicing Tool

It will catch the lace, and pull it through the belt, when the lace only projects ¼ to ½ inch through the belt. Each.....$0.50

LOTHROP PATENT BELT AWLS
For Lacing Belts

Each.....$0.50

ELLIOTT PATENT LACE CUTTER

Each.....$0.50

REVOLVING BELT PUNCH

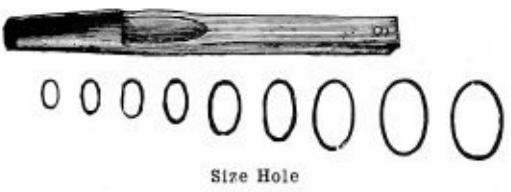
With 4 tubes, each, $1.50. Extra tubes, each, 20c.

IMPROVED STEEL BELT COUPLINGS

For Round Belts or Cord

Size, in...	1/8	3/16	1/4	5/16	3/8	7/16
Per doz...	$2.00	2.00	2.00	2.50	3.00	3.50
Size, in...	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4
Per doz.	$4.00	5.00	6.00	9.00	13.00	18.00	22.00	26.00

OVAL DRIVE BELT PUNCHES



Size Hole

No.	4	5	6	7	8	9	10	11	12
Price each	$0.40	.40	.40	.50	.50	.50	.60	.60	.60

THE LX Combination Belt Cutter

Cutter, Awl and Pliers in one tool. With Adjustable Gauge

Price, $1.50 each.

COPPER RIVETS AND BURRS

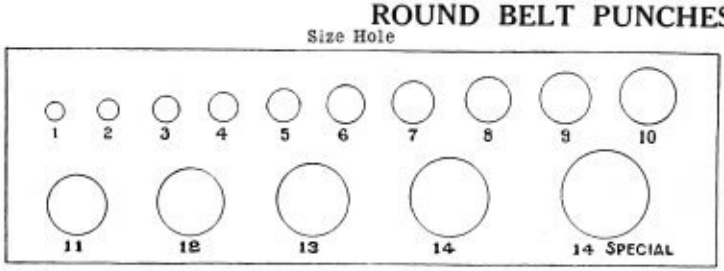
Actual size

Rivets and Burrs, equally assorted, packed in 1 lb. boxes. Made in all lengths ¼ inch to 1½ in., all numbers.

No.	7	8	9	10	11	12	13	14	15
Price per lb.	$0.49	.50	.52	.54	.56	.58	.60	.65	.70

Assorted lengths in ½ pound packages only, five cents additional.

ROUND BELT PUNCHES



No 1, 2, 3, 4, 5, 6	each,	$0.25
No. 7, 8, 9	"	.25
No. 10, 11, 12	"	.30
No. 13, 14	"	.50
No. 14 Special	"	.60

RIVET SET AND HEADER

No. 7 for No. 7 Copper Rivets				each,	$0.50
No. 8 " No. 8	"	"		"	.50
No. 9 " No. 9	"	"		"	.50
No. 10 " No. 10	"	"		"	.50

TUBULAR RIVETS

Dia. of Head 3/8, Dia. of Body 3/64 Japanned Coppered or Tinned.

3/16, 4/16, 5/16	per	1,000,	$0.95
6/16, 7/16	"	"	1.05
8/16	"	"	1.25
9/16	"	"	1.35
10/16	"	"	1.45
11/16	"	"	1.55
12/16	"	"	1.65

SLOTTED CLINCH RIVETS

Require no hole to insert. Require no Burr to clinch.

Inches long.

Actual size No. 9

COPPERED

100 in package, 12 packages to carton, and 1,000 in bulk.

No. 9. 3/16, 4/16, and 5/16 in. long, solid size per M, $0.77 per carton, $0.96.

6/16, 7/16, and 8/16 in. long, solid size per M, $0.87 per carton, $1.04.

9/16 and 10/16 in. long, solid size per M, $0.97

11/16 and 12/16 in. long, solid size, per M, $1.67

BLAKE'S IMPROVED BELT STUDS

Per Box of 100

No. 6	$0.60
No. 5	.70
No. 4	.80
No. 3	.90
No. 2	1.25
No. 1	1.65
No. 0	2.00
No. 00	2.50

Large Cutters for Rubber Belts.....each $1.25
Small " " Leather " ..... " .90
Awls to spread the slit..... .25
Awl and Pliers Combined..... .40

THE LX IMPROVED BELT STUDS

GUN METAL
Per Box of 100

No. 3	$0.90
No. 2	1.25
No. 1	1.65
No. 0	2.00

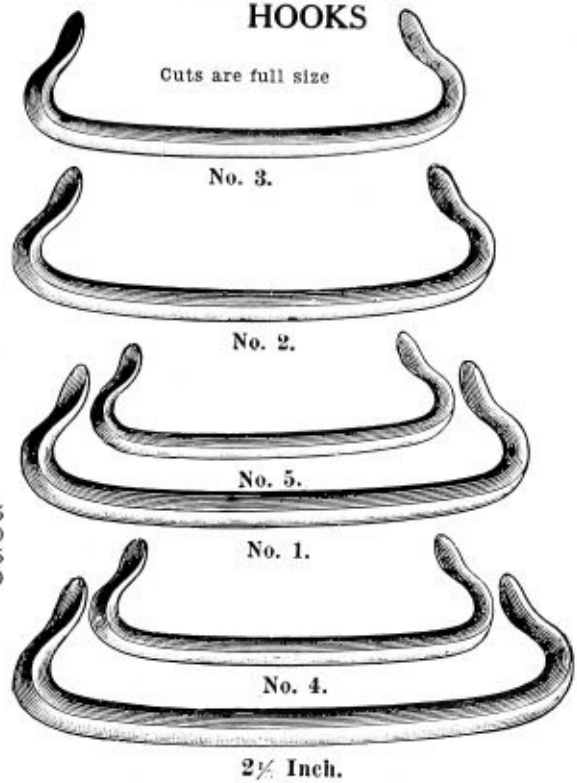
OVAL POINTED BELT HOOKS

Made of Norway Wire with Oval Points

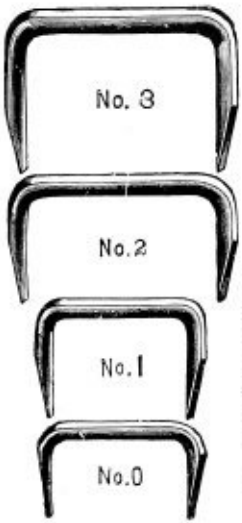
No.	Length inches	No. in Box	Per 1,000	No.	Length inches	No. in Box	Per 1,000
15		250	$2.00	7	1 1/8	250	$6.00
14		250	2.40	6	1 1/4	250	8.50
13	3/4	500	2.60	5	2 1/16	250	11.00
12		250	2.80	4	2 1/8	100	14.00
11		500	3.00	3	2 1/4	100	16.00
10	1 1/16	250	3.50	2	2 1/2	100	20.00
9	1 1/8	250	4.00	1	2 1/2	100	30.00
8	1 1/4	250	5.00	.	..	...	.....

JONES' IMPROVED BEVEL POINTED BELT HOOKS

Cuts are full size



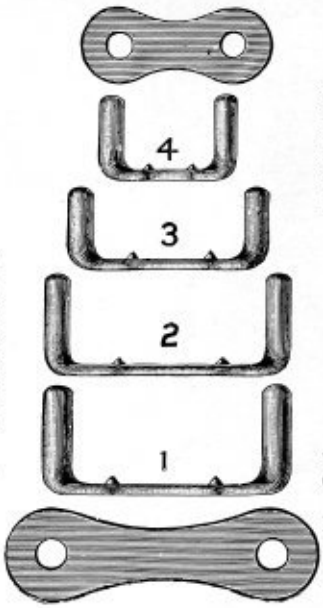
Number	Amount in Box	Per 1,000
10	500	$3.50
9	500	4.00
8	500	5.00
7	250	6.00
6	250	8.50
5	250	11.00
4	200	14.00
3	200	16.00
2	200	20.00
1	100	30.00
2½ in.	100	50.00
3 "	100	60.00



COVEL BELT HOOKS

To apply these Fasteners, place the ends of belt together upon a soft wooden block, outside up. Drive Fasteners straight through both ends alike; place them about ½ inch apart; turn belt over and lay upon a flat surface of rough iron; turn points slightly and clinch down.

Put up in boxes of 200 each, all sizes, per 1,000, $2.50.



SMITH'S PATENT BELT FASTENERS

No.	Use for	Per Box of 100
1	All Heavy Belts.....	$2.00
2	Cotton Belts.	1.75
3	All Rubber Belts, excepting 5 and 6 ply.....	1.50
4	All Leather Belts, excepting Large Drive.....	1.25

Combination Punch for same...each, $1.25
Reamers... " .35

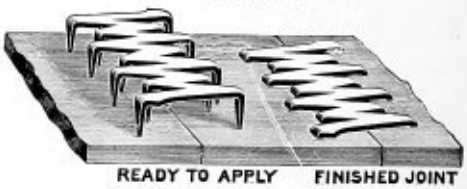
POTTER'S PATENT BELT HOOKS

Two or more Hooks are used on belts wider than four inches.

PRICE LIST

		SINGLE LEATHER		
No. 1.	For 1	inch Belts.....	per 100,	$1.50
" 2.	" 1½	"	"	2.00
" 3.	" 2	"	"	2.50
" 4.	" 2½	"	"	3.00
" 5.	" 3	"	"	3.50
" 6.	" 3½	"	"	4.50
" 7.	" 4	"	"	5.50
		DOUBLE LEATHER		
No. 8.	For 2	inch Belts.....	per 100,	$5.00
" 9.	" 2½	"	"	6.50
" 10.	" 3	"	"	7.50
" 11.	" 3½	"	"	8.50
" 12.	" 4	"	"	9.50
		3-PLY RUBBER OR COTTON		
No. 26.	For 2	inch Belts.....	per 100,	$4.00
" 17.	" 2½	"	"	5.00
" 20.	" 3	"	"	7.00
" 21.	" 4	"	"	8.00
		4 PLY RUBBER OR COTTON		
No. 13.	For 2	inch Belts.....	per 100,	$5.00
" 14.	" 2½	"	"	6.50
" 15.	" 3	"	"	7.50
" 16.	" 4	"	"	9.50
		4 PLY OLD BELTS, RUBBER OR COTTON		
No. 27.	For 2	inch extra wide.....	per 100,	$8.00
" 18.	" 3	" "	"	10.00
" 19.	" 4	" "	"	12.00
		5 OR 6 PLY RUBBER OR COTTON		
No. 22.	For 3	inch Belts.....	per 100,	$10.00
" 23.	" 4	"	"	12.00
		6, 7 AND 8 PLY BELTS, RUBBER OR COTTON		
No. 24.	For 3	inch Belts.....	per 100,	$12.00
" 25.	" 4	"	"	15.00
		OLD SINGLE LEATHER, MADE EXTRA WIDE		
No. 28.	For 3	inch wide	per 100,	$6.00
" 29.	" 4	"	"	8.00
		FOR EXTRA HEAVY LEATHER, RUBBER OR CANVAS DRIVING BELTS		
Special "AA,"	Teeth ½	inch long.....	per 100,	$33.00
" "A,"	" ⅝	"	"	33.00
" "B,"	" ¾	"	"	33.00

BRISTOL'S PATENT STEEL BELT LACING



Box contains enough assorted lengths to lace 100 inches.

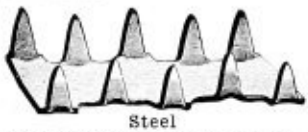
No.	Thickness and Kind of Belt	Per box
00	Split Leather and Extra Light Belts, 1/8 to 3/16 inch.....	$1.00
0	Split Leather and Light Belts, 3/16 to 1/4 inch.....	1.00
1	Ordinary Single Leather Belts 1/4 to 1/4 inch.....	1.50
2	Extra Heavy and Wide Single Leather Belts, 1/4 to 5/16 inch.....	2.00
3	Double Leather Belts, 5/16 to 3/8 inch.....	2.50
4	Heavy Double Leather Belts, 3/8 to 7/16 inch.....	3.00
5	Extra Heavy Double Leather Belts, 7/16 to 1/2 inch	3.50
100	Lightest Rubber and Cotton Belts, 1/16 to 1/8 inch..	1.00
10	2-ply Rubber and Cotton Belts, 1/8 to 1/16 inch.....	1.00
11	3 " " " " " 1/16 " 1/4 "	1.50
12	4 " " " " " 1/4 " 5/16 "	2.00
13	5 " " " " " 5/16 " 3/8 "	2.50
14	6 " " " " " 3/8 " 7/16 "	3.00
15	7 " " " " " 7/16 " 1/2 "	3.50
17	8-ply and Extra Double Heavy Rubber and Cotton Belts 1/2 to 5/8 inch.....	4.95
19	10-ply and Extra Heavy Conveyor Belts from 11/16 to 3/4 inch.....	6.05
1100	All Kinds of Belts 1/16 to 1/8 inch.....	.90
110	" " " " 1/8 " 3/16 "	1.00
110½	" " " " 3/16 " 1/4 "	1.25
111	" " " " 1/4 " 5/16 "	1.50
112	" " " " 5/16 " 3/8 "	2.00
113	" " " " 3/8 " 7/16 "	2.50
114	" " " " 7/16 " 1/2 "	3.00
115	" " " " 1/2 " 5/8 "	3.50
117	" " " " 5/8 " 3/4 "	4.95
119	" " " " 3/4 " 13/16 "	6.05

STANDARD BELT FASTENER

Malleable

Packed 50 in a box.

No.	Use for	Price per 100
1	1 inch Belts, Single Leather	$1.50
2	1¼ and 1½ inch Belts, Single Leather	2.00
3	1¾ and 2 inch Belts, Single Leather	2.50
4	2¼ and 2½ inch Belts, Single Leather	3.00
5	2¾ and 3 inch Belts, Single Leather	3.50
6	3¼ and 3½ inch Belts, Single Leather	4.50
7	3¾ and 4 inch Belts, Single Leather	5.50
3½	2 inch Belts, Old Single Leather	3.50
4½	2½ " " " " "	4.50
5½	3 " " " " "	5.50
6½	3½ " " " " "	6.50
7½	4 " " " " "	7.50
8	2 " " Double Leather	5.00
9	2½ " " " "	6.50
10	3 " " " "	7.50
11	3½ " " " "	8.50
12	4 " " " "	9.50
17	2½ " " 3-ply Rubber	5.00
20	3 " " " "	7.00
21	4 " " " "	8.00
12½	1½, 3 and 4½ in. Belts, 4-ply Rubber	4.00
13	2 inch Belts, 4-ply Rubber	5.00
14	2½ " " " "	6.50
15	3 " " " "	7.50
16	4 " " " "	9.50
18	3 " " " Old Rubber	10.00
19	4 " " " " "	12.00
21½	2½, 5 and 10 inch Belts, 5 and 6 ply Rubber	9.00
22	3 inch Belts, 5 and 6-ply Rubber	10.00
23	4 " " 5 " 6 " "	12.00
24	3 " " 7 " 8 " "	12.00
25	4 " " 7 " 8 " "	15.00
26	4 " " 8-ply, extra heavy	25.00
27	4-inch teeth, ⅞ inch long	33.00



Steel

Packed 50 and 100 in a box.

No.	Use for	Price per 100
51	1 inch Belts, Single Leather or 3-ply Rubber	$1.50
52	1½, 3 inch Belts, Single Leather or 3-ply Rubber	2.00
53	2, 4, 6 inch Belt, Single Leather or 3-ply Rubber	2.50
54	2½, 5 inch Belts, Single Leather or 3-ply Rubber	3.00
54½	3 inch Belts, Single Leather, or 3-ply Rubber	4.00
55	2, 4, 6 inch Belts, Double Leather or 4-ply Rubber	5.00
56	2½, 5 inch Belts, Double Leather or 4-ply Rubber	6.50
57	3, 6 inch Belts, Double Leather or 4-ply Rubber	7.50
58	2, 4, 6 inch Belts, 5 and 6-ply Rubber	8.50
59	2½, 5, 10 inch Belts, 5 and 6-ply Rubber	9.00
60	3, 6, 9 inch Belts, 5 and 6 ply Rubber	10.00

KENEHAN STEEL BELT FASTENER

No.	Use for	Packed in box	Price per 100
0	Light Narrow Belts	100	$0.80
1	" " "	100	.90
2	" " "	100	1.20
3	Heavy Single Leather or 3-ply Rubber	100	1.80
4	Heavy Single Leather or 3-ply Rubber	50	2.30
5	Light Double Leather or 4-ply Rubber to 10 inches	50	2.70
6	Light Double Leather or 4-ply Rubber to 10 inches	50	3.00
7	Double Leather or 5 and 6-ply Rubber	50	3.90
8	Double Leather or 5 and 6-ply Rubber	50	4.50
9	Extra Heavy Double Leather or 8 to 10-ply Rubber	50	4.00
9½	Extra Heavy Double Leather or 8 to 10-ply Rubber	50	5.50
10	Extra Heavy Double Leather or 8 to 10-ply Rubber	50	7.00
12	Heavy Driving Belts up to ½ inch thick	25	8.50
24	Heavy Driving Belts up to ½ inch thick	25	10.00

RAINBOW PACKING

NO BAKING
OR
FOLLOWING UP

MAKES
STEAM JOINTS
INSTANTLY

Facsimile of a Roll of RAINBOW PACKING. None genuine without the Trade-Mark, the word "Rainbow" in a Diamond in Black

This packing is especially adapted for very high pressure, and is not affected by any degree of steam heat. It will not harden under any degree of heat, or blow out under the highest pressure, and will make an Air, Steam, Hot or Cold Water Joint equally well.

It is not affected by oils, ammonia, liquors, steam, heat, or alkalies. Unlike plumbago and other sheet packing, it will not harden or crack. Joints can be made and broken in one-eighth the time consumed with packings that harden, as a tool is not required to break or face-off joint.

Steam-heating companies can make thousands of joints in new plants without the use of steam, with the assurance and guarantee that, when steam is applied, every joint will be perfectly tight, saving the labor of baking, following up, etc., as is the case when usudurian or plumbago packings are used, thereby saving 100 to 300 per cent in labor and time.

A FEW OF THE ADVANTAGES "RAINBOW" HAS OVER ANY OTHER PACKING

It packs any kind of Steam, Air, or Hot Water Joint; it is a non-conductor, and lasts longer than any other packing in use.

RAINBOW is the most durable, effective, and economical packing made, and the users of steam have long felt the need of an article that could be adapted to all the uses that packing is put to.

RAINBOW will make a tight joint, however rough the surface may be to which it is applied.

To locomotive engine builders and railroad companies, RAINBOW is invaluable, as it obviates the necessity of facing joints, therefore reducing the cost of construction and repairs, as joints will remain tight much longer RAINBOW not being affected by contraction or expansion.

Joints should be faced with Plumbago, Lampblack, or Chalk. This packing can be taken out and repeatedly replaced.

Made in rolls about 200 lbs. each, $\frac{1}{32}$, $\frac{1}{16}$, $\frac{3}{32}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$ inch.

Standard width, 36 inches per lb., $1.00.

Made any width up to 48 inches

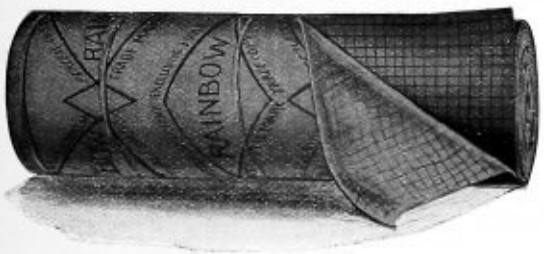
Thousands of Imitators
No Equal
Will Hold Highest Pressure

Don't Have to Use Wire and
Cloth to Hold Rainbow
Can't Blow it out

Facsimile of a Roll of RAINBOW PACKING. None genuine without the Trade-Mark, the word "Rainbow" in a Diamond in Black

RAINBOW SHEET RUBBER PACKING

WITH WIRE INSERTION



To those who are partial to the use of a wire mesh in a packing we unhesitatingly recommend the Rainbow as the best ever placed on the market.

Price, per pound, $1.50

Manufactured $\frac{3}{64}$ inch, $\frac{1}{16}$ inch, $\frac{3}{32}$ inch, $\frac{1}{8}$ inch, $\frac{3}{16}$ inch and $\frac{1}{4}$ inch thick.

Standard width, 36 inches. Made any width up to 48 inches to order.

Gaskets cut from wire inserted Rainbow furnished when desired.

GERMANE SHEET AND FLANGE PACKING

Facsimile of roll of Germane Packing

The color of Germane Packing is black. It has a smooth polished wax finish. There are three rows of diamonds in red, containing the word Germane in red, extending throughout the entire length of each and every roll.

The Germane Sheet and Flange Packing is technically known as the German compound, and is made from the formula of a prominent German chemist, whose idea was to produce a packing with a polished surface and finish, regardless of cost.

Price, per pound, $1.50

WIZARD SUPERHEAT AND HIGH PRESSURE STEAM PACKING

This packing is especially adapted for making very high pressure and superheat steam joints.

It is a combination of asbestos copper fibre and other heat resisting substances, chemically treated in such a manner that at about 250 pounds steam pressure it becomes practically one with the flange, and yet the joint can be broken and the Wizard replaced many times.

Superheat or high pressure steam under any degree will not disintegrate or blow the packing out, and is absolutely the only positively satisfactory packing on the market.

Wizard Packing is vastly superior to copper or other metallic gaskets, and its use does away with the necessity of planing or smoothing flange surfaces.

Wizard Packing solves the problem superintendents and engineers of superheat plants have been earnestly seeking for.

Wizard Packing is invaluable for use in gas engines and motor car joints, exhaust pot of locomotives, and in all cases where a joint is subjected to a high degree of dry heat. Price per pound.....$1.50

PARAFINE PACKING

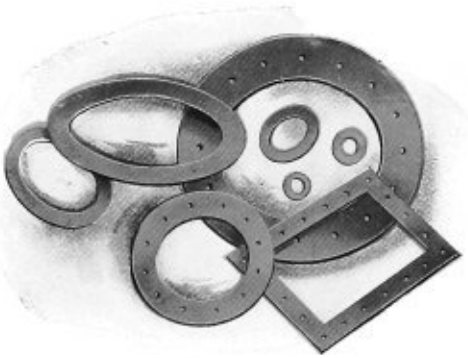
Especially adapted for Oil Joints, per pound..... $

Cloth Insertion / Cloth Both Sides } per pound ..... .30

PURE GUM SHEET PACKING

Price, per pound..... .90

RAINBOW GASKETS AND RINGS



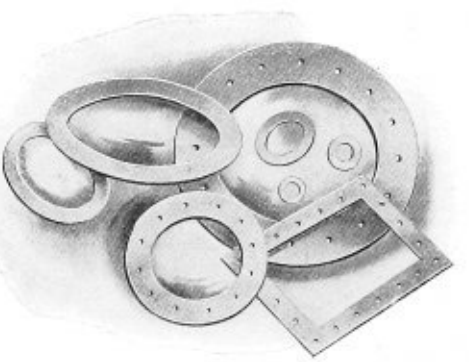
Any size and thickness made to order on short notice.

	Plain	Wire Inserted
1/32 inch thick, price.....per lb.	$1.40	.....
1/16 to 1/8 inch thick, price "	1.30	$2.50
3/16 to 1/4 " " " "	1.10	2.00

RAINBOW RINGS FOR UNIONS, ICE MACHINES, PUMPS, ETC.

Internal Diameter	1/2 and 3/4	3/8 and 1/8	1/2 and 1/4
1 in. and smaller. per lb.	$3.00	$2.50	$2.20
1 to 2 inch..... "	2.50	2.00	1.70
2 to 3 " ..... "	2.00	1.50	1.20

C. I. AND C. B. S. GASKETS



1/8 inch thick or less, price.....per lb. $1.00
3/16 " " and up, " ..... " .70

CAUTION

Care should be taken in ordering Gaskets and Rings, to specify shape, internal and external diameter, as well as flange.

RING GASKETS, 1/16 INCH THICK

Size of Pipe Inches	Inside Diameter of Gasket inches	Outside Diameter of Gasket inches	Approximate Weight of Gaskets Each
2	2	4	1/2 ozs.
2 1/2	2 1/2	5	1 "
3	3	5 1/4	1 "
3 1/2	3 1/2	6 1/4	1 1/2 "
4	4	6 3/4	1 3/4 "
4 1/2	4 1/2	7	1 3/4 "
5	5	7 3/4	2 "
6	6	8 3/4	2 1/4 "
7	7	10	3 "
8	8	11	3 1/4 "
9	9	12 1/2	4 1/4 "
10	10	13 1/4	4 1/2 "
12	12	16	6 1/2 "
14	14	17 3/4	7 "
15	15	19	8 "
16	16	20 1/4	9 1/2 "
18	18	21 3/4	9 "
20	20	24	10 1/4 "
22	22	26	11 1/2 "
24	24	28 1/4	13 "
2	2	6	1 3/4 "
2 1/2	2 1/2	7	2 1/2 "
3	3	7 1/2	2 3/4 "
3 1/2	3 1/2	8 1/2	3 1/2 "
4	4	9	3 3/4 "
4 1/2	4 1/2	9 1/4	3 3/4 "
5	5	10	4 1/2 "
6	6	11	4 3/4 "
7	7	12 1/2	6 3/4 "
8	8	13 1/2	7 "
9	9	15	8 1/4 "
10	10	16	9 3/4 "
12	12	19	12 1/2 "
14	14	21	15 1/4 "
15	15	22 1/4	1 lb. 1 "
16	16	23 1/2	1 " 2 1/2 "
18	18	25	1 " 2 "
20	20	27 1/2	1 " 5 1/4 "
22	22	29 1/2	1 " 7 3/4 "
24	24	32	1 " 12 "

RAIN-BESTO COMBINATION METALLIC GASKET

This Gasket is made of the celebrated Rainbow Packing, mixed with long asbestos fiber, and a specially constructed metal insertion. Guaranteed not to rust by action of steam, oil, acid, ammonia or sulphur. Joints can be broken daily for a year.

THE ECLIPSE SECTIONAL RAINBOW GASKET

Dealers who have not carried gaskets in stock, owing to the numerous and unsalable sizes, will appreciate the Eclipse, as they will, with a box of each size, be able to make any and all sizes of gaskets. No waste or unsalable stock.

All pieces, no matter how small, can be formed on the metal tubes into a sectional gasket, as shown in cut.

The Eclipse Gasket can be readily fitted to any size man or hand-hole plate in use, and a perfectly tight joint guaranteed in all cases where the plain and simple directions, which accompany each box, and are here given, are followed.

DIRECTIONS FOR USE

Lay the Eclipse Gasket rope around the man or hand-hole plate, about ¼ inch from the inside shoulder, and cut the ends off *square*, so that they will go around the plate and meet nicely; after which insert the metal tube half-way in each end, butting the ends together; then wind the seam spirally with the gummed tape, lapping the same as shown in cut. Make your joint as usual. It is *not* necessary to screw up the plate as hard as with the old-style gasket, as the Eclipse Gasket will flatten and conform to any seat, no matter how rough it may be.

Will Fit any Hand or Man-Hole in the World. Manufactured from the

CELEBRATED RAINBOW PACKING COMPOUND

Length and Weight per Box			Per Pound
¼ inch diameter	48 feet	1½ pounds	$1.50
⅜ "	36 "	2¾ "	
½ "	26 "	5 "	
⅝ "	24 "	5¾ "	1.00
¾ "	18 "	6 "	
⅞ "	12 "	6¼ "	
1 "	12 "	7 "	

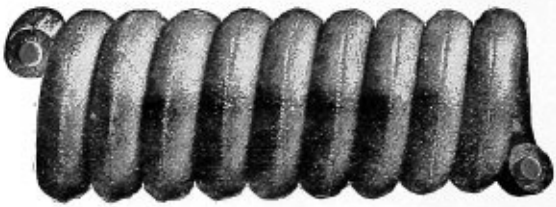
¼ and ⅜ inch for Pipe Unions.
½ inch for Hand-Hole Plates.
⅝ and ¾ inch for Man-Hole Plates.
⅞ and 1 inch for Extra Large Man-Hole Plates.

PROTECTION

In order to protect our customers more fully against worthless tubings, we are now manufacturing all Eclipse Gaskets like the section shown below; TRADE ECLIPSE MARK PATENTED 1891, imbedded in the tubing every six inches. All gasket tubings not showing this mark are infringements on our patents, and are worthless imitations.

Facsimile of a 6-inch section of Eclipse Gasket showing Name and Trade-Mark imbedded

PEERLESS SPIRAL PISTON AND VALVE ROD PACKING



ONCE TRIED ALWAYS USED. LASTS 12 TO 16 MONTHS

This packing is manufactured under patents and trade-marks owned and controlled exclusively by this company.

It is made with Round RAINBOW Rubber Core, surrounded by layers of soft, loosely-woven duck, thoroughly impregnated with finest grade of plumbago, absolutely free from grit or acid.

It will Hold 400 lbs. of Steam

It will tightly pack any rod, however badly scored or corroded. Large rods in high-speed engines run from twelve to sixteen months without repacking.

We guarantee it will not get hard under any degree of heat.

DIRECTIONS FOR USE

When first put in, screw glands up with wrench to shape packing, take two or three turns, release glands, then screw them up with THUMB AND FOREFINGER only until packing is fully expanded.

Should there be any "blow" do not screw gland any tighter, as blow will cease as soon as packing has expanded.

Packed in Boxes. Weights and Lengths as per Table

Size	Length	Weight	Per lb.	Size	Length	Weight	Per lb.
1/8 inch	118 feet	1 1/4 lbs.	$2.00	15/16 inch	24 feet	9 lbs.	$1.00
3/16 "	105 "	1 1/2 "		1 "	24 "	10 "	
1/4 "	84 "	3 1/4 "		1 1/16 "	12 "	5 1/2 "	
5/16 "	72 "	3 3/4 "		1 1/8 "	12 "	5 3/4 "	
3/8 "	72 "	4 1/2 "		1 3/16 "	12 "	6 1/4 "	
7/16 "	60 "	5 "		1 1/4 "	12 "	7 1/4 "	
1/2 "	36 "	4 "		1 5/16 "	12 "	8 1/2 "	
9/16 "	36 "	5 "	$1.00	1 3/8 "	12 "	9 "	
5/8 "	36 "	7 "		1 7/16 "	12 "	9 3/4 "	
11/16 "	24 "	5 "		1 1/2 "	12 "	11 "	
3/4 "	24 "	5 3/4 "		1 5/8 "	12 "	13 1/2 "	
13/16 "	24 "	7 "		1 3/4 "	12 "	15 1/2 "	
7/8 "	24 "	7 3/4 "		2 "	12 "	18 1/2 "	

PEERLESS SQUARE SPIRAL PISTON AND VALVE ROD PACKING

The Peerless Square Spiral Piston and Valve Rod Packing is the same in all particulars as the Peerless Spiral Piston and Valve Rod Packing illustrated above.

Furnished in rings, if so desired, at a slight advance in price over spiral.

In ordering Peerless Piston and Valve Rod Packing, "Spiral" form will always be sent, unless otherwise specified.

PEERLESS PISTON AND VALVE ROD PACKING

In Flat Boxes

It will hold 400 lbs. of Steam.

It will tightly pack any rod, however badly scored or corroded. Large rods in high-speed engines run from twelve to sixteen months without repacking.

We guarantee it will not get hard under any degree of heat.

In ordering Peerless Piston and Valve Rod Packing, "Spiral" form will always be sent, unless otherwise specified.

DIRECTIONS FOR USE

When first put in, screw glands up with wrench to shape packing, take two or three turns, release glands, then screw them up with THUMB AND FOREFINGER only until packing is fully expanded.

Should there be any "blow" do not screw gland any tighter, as blow will cease as soon as packing has expanded.

This packing is manufactured under patents and trademarks owned and controlled exclusively by this company.

It is made with Round RAINBOW Rubber Core, surrounded by layers of soft, loosely-woven duck, thoroughly impregnated with finest grade of plumbago, absolutely free from grit or acid.

PACKED IN BOXES, WEIGHTS AND LENGTHS PER TABLE

Diameter	Contents	Weight	Per lb.	Diameter	Contents	Weight	Per lb.
1/8 inch	118 feet	1 1/4 lbs.	$2.00	5/16 inch	12 feet	4 1/2 lbs.	$1.00
3/16 "	105 "	1 1/2 "		1 "	12 "	4 3/4 "	
1/4 "	96 "	3 1/4 "	$1.00	1 1/16 "	12 "	5 1/4 "	
5/16 "	72 "	3 1/2 "		1 1/8 "	12 "	6 "	
3/8 "	54 "	3 1/4 "		1 3/16 "	12 "	6 1/4 "	
7/16 "	54 "	4 "		1 1/4 "	12 "	7 1/2 "	
1/2 "	36 "	3 3/4 "		1 5/16 "	12 "	8 1/2 "	
9/16 "	36 "	4 3/4 "		1 3/8 "	12 "	9 "	
5/8 "	36 "	6 3/4 "		1 7/16 "	12 "	9 3/4 "	
11/16 "	18 "	4 1/2 "		1 1/2 "	12 "	11 "	
3/4 "	18 "	4 1/4 "		1 5/8 "	12 "	13 1/2 "	
13/16 "	12 "	3 1/4 "		1 3/4 "	12 "	15 1/2 "	
7/8 "	12 "	4 "		2 "	12 "	18 1/2 "	

Manufactured and Patented Exclusively by the Peerless Rubber Manufacturing Company

SUCCESS

SEMI-METALLIC DIAGONAL EXPANSION SPIRAL PACKING

RAINBOW CORE

Patented Oct. 31, 1899

The Upper Section of this packing is composed of Solid Braided Cotton Strands, with the celebrated Rainbow Packing Core and Soft Metallic Corners, finished to oblong shape by hydraulic pressure. By braiding the strands, the fibre never separates under the severest pressure, and outwears all other construction five to one. Our imitators use a cheap, loosely-twisted jute, which readily separates and will not retain the lubricants, and quickly ferments and becomes hard. In the "Success" Packing, we use specially compounded solid lubricants, which preserve the natural qualities of the cotton strands, which never dries out or ferments.

The Lower Section of the "Success" Diagonal Expansion Spiral Packing, with Rainbow Core, is made of two wedges of fine woven cotton duck, in which only the best quality of pure rubber friction is used between the plies. The quality is such that the plies will never separate. It is saturated with the finest grade of air-floated graphite. The two wedges work automatically on a soft metallic strip, which insures the adjustability as required, and prolongs the life of the wedges. The upper edge of the soft metallic strip, or plate, works against the surface of the piston rod and increases the tightness thereof, to prevent leakage.

The Two Sections are bound together with cotton yarn, which holds the several sections together in proper shape. The "Success" is an elastic packing; it is also an expansive packing. Its construction and the superior material used permits it to conform to all inequalities of old or worn rods.

The Spiral form is the correct shape of all modern constructed packing, and readily and quickly conforms to the ring shape so greatly desired. The soft metal used is a wear resister; it is an automatic expander under heat conditions; it will not scratch or cut the rod under any conditions.

The "Success" is the "Best" Combination Packing yet devised, both as regards principle of construction and material used, for steam (low or high pressure), for water (hot or cold), and for ammonia machines.

PUT IN SPIRAL FORM IN BOXES

Diamdter	Contents	Weight	Per lb.
1/4 inch	25 feet	3 3/4 lbs.	
3/8 "	25 "	5 1/2 "	
1/2 "	12 1/2 "	4 1/2 "	
5/8 "	12 1/2 "	7 1/4 "	
3/4 "	12 1/2 "	8 1/2 "	
7/8 "	12 1/2 "	10 1/2 "	$1.00
1 "	12 1/2 "	13 "	
1 1/4 "	12 1/2 "	17 "	
1 1/4 "	12 1/2 "	20 1/2 "	
1 3/4 "	12 1/2 "	25 "	
1 1/2 "	20 "	50 "	

Made in all sizes, from 1/4 inch to 3 inches, and any lengths desired.

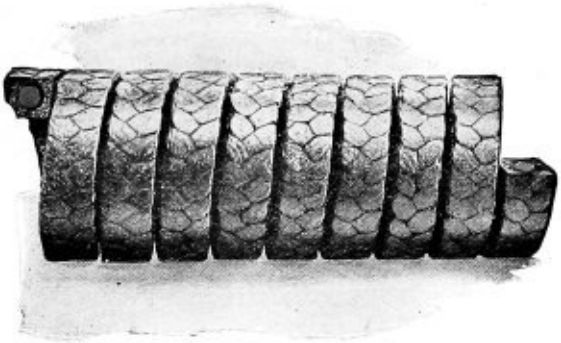
HERCULES COMBINATION METALLIC STOP-VALVE PACKING

This packing is, as yet, the only packing produced that will pack Stop and Throttle Valves so that they are perfectly reliable and can be opened and closed with ease by hand, without using a heavy wrench. The metal employed in the manufacture of this packing is the result of years of experiments in producing metal especially adapted for this purpose. It is a combination of metals which sulphur and steam will not affect, neither will it score or cut a rod or stem. We also use the celebrated Rainbow Packing for a core or cushion.

Put up in boxes, weights and lengths as follows:

Diameter	Contents	Weight	Per pound
1/8 inch	84 feet	1 3/4 lbs.	
5/32 "	60 "	2 "	
1/4 "	24 "	1 3/4 "	
3/8 "	24 "	3 1/4 "	
1/2 "	12 "	2 3/4 "	
5/8 "	12 "	4 1/4 "	$2.50
3/4 "	6 "	3 "	
7/8 "	6 "	3 1/2 "	
1 "	6 "	4 3/4 "	
1 1/8 "	6 "	6 "	
1 1/4 "	6 "	7 1/2 "	

HONEST JOHN HYDRAULIC RAINBOW CORE PACKING



The Best Hydraulic and Cold Water Packing on the Market

It is made strictly on honor, hence its name "Honest John." The core is made of the celebrated Rainbow Packing and acts as a cushion; the flax employed is the finest Italian; the lubricant being especially compounded to withstand the highest practical hydraulic pressure. This packing will outwear the ordinary braided square flax packing several times over. Its original cost is more than that of the square flax packing, but its great durability makes it by far the cheaper packing.

Being square, it fits the stuffing-box exactly.
It will not scatter or dissolve by action of water.
When worn by rods does not lose its strength.
It has just the elasticity required.

The lubricants, being composed of our special compounds and air-floated graphite, preserve, but do not clog, corrode, or gum machinery.

It is free from grit or hard substances that cut and permanently destroy machinery. A trial will convince you.

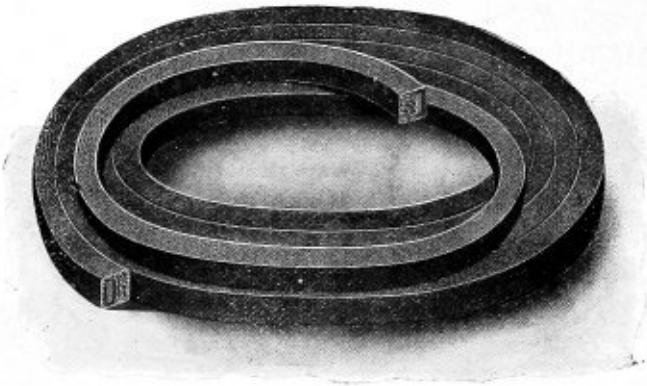
Put up in Boxes, weights and lengths as follows:

Diameter	Contents	Weight	Per pound
1/4 inch	48 feet	3 1/2 lbs.	
3/8 "	48 "	4 1/2 "	
1/2 "	56 "	6 3/4 "	
5/8 "	29 "	6 "	
3/4 "	30 "	7 3/4 "	
7/8 "	16 "	7 1/2 "	
1 "	16 "	7 3/4 "	
1 1/8 "	24 "	17 1/2 "	$1.00
1 1/4 "	24 "	21 "	
1 3/8 "	24 "	25 "	
1 1/2 "	24 "	30 "	
1 5/8 "	24 "	36 1/2 "	
1 3/4 "	24 "	38 "	
1 7/8 "	24 "	45 "	
2 "	24 "	50 "	

We can furnish these Packings in Rings at short notice.

Patented and Manufactured exclusively by The Peerless Rubber Manufacturing Company.

PEERLESS No. 6 HOT WATER PUMP PACKING



This style of Peerless, known as No. 6, has been especially prepared for packing the hot water end of pumps.

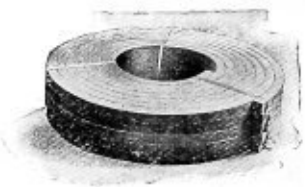
The shape and the position in which the Rainbow core is placed keeps the packing against the plunger and at all times insures a tight joint. Per lb.....$1.50

PEERLESS SPECIAL CANVAS PUMP PACKING

A high-grade Pump Packing, made on same principles as the Standard, difference being in the quality of duck used, as well as a white friction. In lengths of 15 feet. Sizes, ¼ to 1½ inches in diameter.
Per lb.....$1.00

Peerless Rock Hard Square Hydraulic Canvas Packing ¼ to 1½ inch diameter. Per lb....$1.00

STANDARD PISTON PACKING

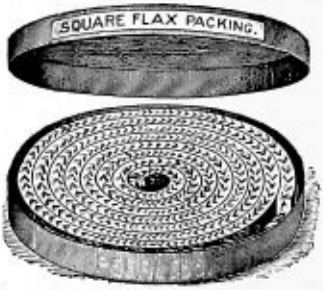


Made of alternate layers of duck and rubber. In lengths of 12 feet. In all sizes, from ¼ inch square and larger.
Per lb.....$0.85

CANVAS RUBBER BACK PACKING

Same as the Square Piston Packing, with the addition of a rubber back. In lengths of 12 feet. All sizes, from ¼ inch square and larger.
Per lb.....$1.00

G. B. C. & Co. BEST QUALITY SQUARE BRAIDED FLAX PACKING



¼ inch diameter and larger. Per lb.....$0.85

LAKESIDE SPIRAL PISTON PACKING

In 12 ft. coils, ⅛ to 1¼ inch dia. Per lb....$1.00

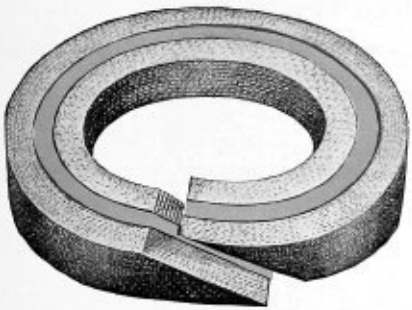
WIZARD BRAIDED WICKING

For Superheated and High-Pressure Steam

Made round or square. Especially useful for packing small valve stems. Put up in one, three and five pound reels.
Per lb.....$2.00
Sizes, 3/16 in., ¼ in., 5/16 in., ⅜ in.

PEERLESS EXPANSION RING PACKING

With Cushion Core, Made from the Celebrated Rainbow Packing Compound



Is made in rings an exact fit to rod and box, and has been subjected to our special lubricating process.

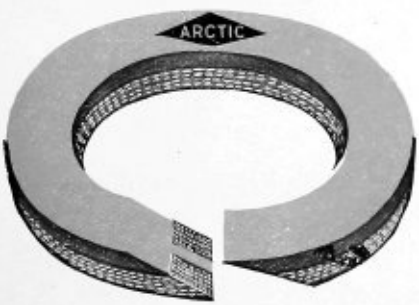
This packing is made in several hundred sizes and can be used in any size stuffing box.

In ordering, give the exact depth of stuffing box and size of piston rod.

Other sizes we can make and ship within three days after receipt of order.

Per lb.....$2.00

ARCTIC AMMONIA RING PACKING



This Packing is specially constructed for ice machine service, of layers of rubber and plies of duck, which are so arranged and laid as to best resist the actions of ammonia, cold and heat.

The duck is a specially made duck, frictioned with an entirely new compound heretofore unknown to the rubber trade, and the core and back are of the celebrated Rainbow packing compound, which is specially adapted to resist ammonia, cold and heat.

This packing is made in several hundred sizes. The rings may be slipped on to the rod very readily. The usual rule is to be observed in giving measurements, the depth and width of stuffing and size of piston rod, in order to get the size desired.

Any and all sizes to order.

Per lb.....$2.00

WIZARD PACKING RINGS

For Superheated and High Pressure Steam

Moulded in concave and convex form in sets of two.

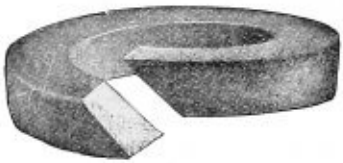
To insure easy adjustment and to avoid undue friction on valve stem a special lubricating compound is incorporated throughout this packing during process of manufacture.

In ordering, give size of rod, and diameter and depth of stuffing box.

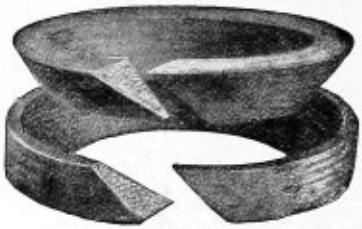
The only satisfactory packing on the market for stop valve and throttle stems using superheated or high pressure steam.

Per lb.....$2.00

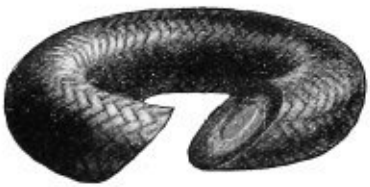
PEERLESS PACKING IN RINGS



Style 1



Style 2



Style 3

Style 4

The cuts represent the different forms in which we manufacture our Peerless Piston and Valve Rod Packing, with and without the core of the celebrated Rainbow Packing Compound. Style No. 2 is furnished only the rim of the packing is wide enough to allow sufficient body to the ring; if not, style No. 1 is sent.

Per lb. $1.20.

PACKINGS

Garlock Spiral Packing	per lb.,	$1.20
" Ring "	"	1.20
P. P. P "	"	1.00
" Special "	"	1.25
Eureka Packing	"	.80
Empire "	"	.60
Metallic Asbestos Packing	"	1.00
Selden's Canvas Core "	"	.80
Selden's Rubber " "	"	.80
Goodsells Rubber Back Flax	"	1.50
Goodsells Dollar Packing	"	1.00
Goodsells Sleeve "	"	1.50
Palmetto Valve Stem	per lb.,	$1.25
Vulca Beston Braided Round Packing on spools 1/16 inch dia.	"	1.25
1/8 inch diam. and up	"	1.00
Rawhide Hydraulic Packing	"	1.50
Pure Gum Piston "	"	1.00

HEMP
In 25, 50, and 100 lb. Coils

Italian A	per lb.,	$0.20
" B	"	.18
American A	"	.14
" B	"	.12
Jute	"	.08

THE RAINBOW GAUGE GLASS RINGS

It always remains soft and yielding and does not become hard when brought into contact with a high degree of heat. The displacement which takes place when screwing up the gland being all on the inside of the Rainbow Ring allows the glass tube to take any position without any strain or leverage on the same, thereby obviating *many troubles* which engineers are well aware of.

Rainbow Packing Rings are put up in boxes containing one gross each.

Size, inches	3/8	1/2	5/8	3/4	1 1/8	1 1/4	1 3/8	1
Per Gross	$2.25	2.50	2.65	2.75	2.90	3.00	3.25	3.50

GILBERT'S GAUGE GLASS PRESERVER

1/4, 1/2, 5/8, 3/4 inch, one dozen in a box.
Price per box.....$0.60

1, 1 1/4 inch, one-half dozen in a box.
Price per box.....$0.60

WAGON SPRINGS

A 1, Compound ..... per lb., $0.30
Extra Standard..... " .40

BAND SAW RUBBER

Pure rubber, 3/16 inch, for band saws, endless,
..... per lb., $1.50

HOSE WASHERS

Standard ..... per lb., $0.80
Extra Standard..... " 1.00

BUMPERS

For saw carriages. Any size or shape. Soft, medium, hard.
Standard ..... per lb., $0.80
Extra Standard..... " 1.00

PEERLESS DICS

They are not affected by Steam, Heat, Oil, or Acid, and will pack an Oil, Acid, Air, Steam, or Water Valve equally well and will not leak.

They are not brittle, but are sufficiently elastic to make a perfect seat without the use of a wrench.

Size	Each	Size	Each	Size	Each
1/4	$0.04	2 1/2	$0.32	10	$1.75
3/8	.05	3	.40	12	2.00
1/2	.06	3 1/2	.50	14	3.00
3/4	.07	4	.60	16	4.50
1	.08	5	.80	18	6.00
1 1/4	.12	6	1.00	20	8.00
1 1/2	.16	7	1.20	22	10.00
2	.24	8	1.40	24	12.00

PUMP VALVES

For Pumping Hot or Cold Water, Air, Oil, Acids, and Alkalies

Acme

ACME No. 1
A hard valve for hot water, 200 lbs. pressure and temperature of 300° F., per lb. $1.40

ACME No. 2
A hard valve for hot water, up to 150 lbs. pressure and temperature of 200° F., per lb..... 1.20

COMP. C
A very soft red condenser valve. Wonderfully successful for marine work, and undoubtedly the best valve for this purpose on the market, per lb..... 3.20

DIAMOND P
Especially made for use on air pumps, per lb..... 2.80

PEERLESS
A soft valve for low pressure cold water and air pump work, per lb..... 2.10

Rainbow

RAINBOW
A high pressure cold water valve, per lb..... $1.90

W. C.
A soft red valve for cold water, 100 to 125 lbs. pressure, per lb..... 1.90

DURHAM VALVE COMP. No. 1
A medium soft valve for cold water, 50 to 75 lbs. pressure, or warm water to 180° F., per lb..... 1.20

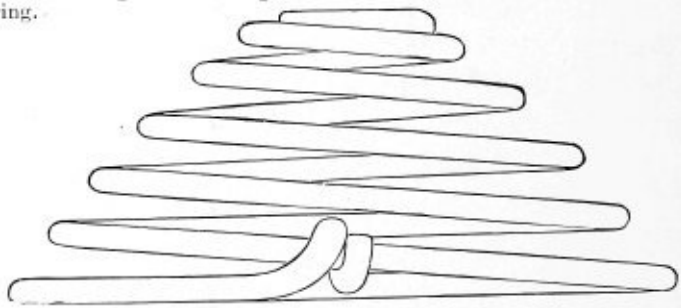
DURHAM VALVE COMP. No. 2
A soft valve for cold water, up to 75 lbs. pressure, per lb..... 1.10

DURHAM VALVE COMP.
A medium hard valve for cold water, up to 50 lbs., per lb..... 1.00

CONICAL PUMP VALVE SPRINGS

Brass Spring Wire

In ordering state if size given is size of valve or diameter of base of spring.



Size of Wire Gauge	For 1½ in. Valve	For 2 in. Valve	For 2½ in. Valve	For 3 in. Valve	For 3½ in. Valve	For 4 in. Valve	For 4½ in. Valve	For 5 in. Valve	For 5½ in. Valve	For 6 in. Valve	For 7 in Valve
3	....	....	....	....	....	....	....	....	....	$1.00	$1.20
4	....	....	....	....	....	....	....	$0.60	$0.80	.90	1.00
5	....	....	....	....	....	$0.25	$0.30	.40	.55	.70	.80
6	....	....	....	....	$0.20	.21	.24	.30	.43	.50	.70
7	....	....	....	$0.16	.18	.19	.22	.26	.35	.38	.60
8	....	....	$0.14	.15	.17	.18	.20	.22	.28	.30	.40
9	....	$0.12	.13	.14	.15	.16	.19	.20	.24	.26	.35
10	....	.11	.12	.13	.14	.15	.18	.19	.20	.24	.30
11	....	.10	.11	.13	.13	.14	.17	.18	.19	.22	.25
12	....	.09	.10	.11	.12	.13	.16	.17	.18	.20	....
13	....	.08	.09	.09	.11	.12	.13	.14	.15	....	....
14	$0.07	.07	.08	.08	.10	.11	.12	.13	....	....	....
15	.06	.06	.07	.07	.08	.09	.10	....	....	....	....
16	.05	.05½	.06	.06	.07	....	....	....	....	....	....
17	.04	.05	.06	.06	....	....	....	....	....	....	....
Base Diameter of Spring	1¼ in.	1¾ in.	2¼ in.	2½ in.	3 in.	3½ in.	4 in.	4½ in.	5 in.	5½ in.	6 in.

RUBBER HOSE

CONDUCTING, HYDRANT, AND ENGINE

Perfected, Peerless, Lakeside, Huron, and Sterling Brands

Internal Diameter	Conducting 2-Ply	Hydrant 3-Ply	Engine 4-Ply	Engine 5-Ply	Engine 6-Ply
½ inch	$0.20	$0.25	$0.30	$0.37	$0.45
¾ "	.25	.30	.37	.46	.55
1 "	.33	.40	.50	.62	.75
1¼ "	.42	.50	.62	.77	.93
1½ "	.50	.60	.75	.93	1.12
1¾ "	.58	.70	.87	1.08	1.30
2 "	.66	.80	1.00	1.25	1.50
2¼ "	.75	.90	1.12	1.40	1.68
2½ "	.83	1.00	1.25	1.56	1.87
2¾ "	.92	1.10	1.37	1.71	2.05
3 "	.99	1.20	1.50	1.87	2.25
3½ "	1.16	1.40	1.75	2.18	2.62
4 "	1.32	1.60	2.00	2.50	3.00
5 "	1.65	2.00	2.50	3.13	3.75
6 "	1.98	2.40	3.00	3.75	4.50
7 "	2.31	2.80	3.50	4.38	5.25
8 "	2.64	3.20	4.00	5.00	6.00
9 "	2.97	3.60	4.50	5.63	6.75
10 "	3.33	4.00	5.00	6.25	7.50

RUBBER GARDEN, HYDRANT, LAWN, AND HOTHOUSE HOSE

Facsimile of a section of Rainbow Ribbon Hose.

Our Brands are

Pefected, Peerless, Knicker, Blue Ribbon, Rainbow Ribbon, Sterling, Reliance, Lakeside.

Net Prices quoted on request.

PERFECTED CONSTRUCTION RUBBER HOSE

Combines all the Best in Rubber and Cotton Rubber Lined Hose

IMPERVIOUS TO MILDEW OR DAMPNESS

INCREASES PRESSURE TEST MORE THAN 80 PER CENT

The perfected construction increases the life of hose, as it reduces to a minimum, mechanical motion, kinking, expansion and elongation.

Both service and shop tests show conclusively that the Perfected construction distributes the mechanical motion the entire length of Standard Air-Brake, Signal and Steam-Heating Hose, instead of concentrating the motion at the end of the shank of nipple and coupling, as in the old construction, where ninety per cent of all hose fails.

Perfected Construction is the greatest advance and progress in Rubber Hose in thirty years.

We guarantee it to be the Best made, none excepted. It will outwear the old, or regular Hose, at least *twice*.

The Perfected Construction is made in Peerless or First Grade only, in:

Air-Brake Hose, Steam Hose, Brewers' Hose, Acid Hose, Air-Drill Hose, Fire Hose, Water Hose, Tubing, and Hose for Pneumatic Tools.

Made in all standard sizes and diameters, and special sizes if required.

Patented
July 16, 1901

PAT'D JULY 16.1901
TRADE
PERFECTED
MARK
COPY'T'D & REG'ST'D.

Copyrighted
and Registered

Manufactured Exclusively by The Peerless Rubber Manufacturing Company

STEAM HOSE

PERFECTED — KNICKER — LAKESIDE BRANDS

Internal Diam.	3-ply	4-ply	5-ply	6-ply	7-ply	8-ply
½ inch....	$0.43	$0.51	$0.63	$0.76	$0.89	$1.02
¾ "	.51	.67	.83	1.00	1.17	1.34
1 "	.67	.83	1.03	1.24	1.45	1.66
1¼ "	.85	1.04	1.30	1.56	1.82	2.08
1½ "	1.02	1.25	1.56	1.87	2.18	2.50
1¾ "	1.18	1.45	1.81	2.17	2.53	2.90
2 "	1.34	1.66	2.07	2.49	2.90	3.32
2¼ "	1.50	1.87	2.33	2.80	3.27	3.74
2½ "	1.66	2.08	2.60	3.12	3.64	4.16
3 "	2.00	2.80	3.50	4.20	4.90	5.60

If Canvas Cover is wanted, we charge as 1-ply. Steam being used in vulcanizing rubber, it follows that in the continual use of steam hose it becomes over-vulcanized. Our Steam Hose is specially prepared to overcome this feature.

For use of buyers, we append a table of heat generated by pressure

40 lbs.	steam pressure	generates	267° heat
50	"	"	280° "
60	"	"	292° "
70	"	"	302° "
80	"	"	311° "
90	"	"	320° "
100	"	"	327° "
120	"	"	341° "
140	"	"	352° "
175	"	"	370° "
185	"	"	375° "
215	"	"	387° "
250	"	"	400° "

EXTRA HEAVY BREWERS' HOSE

PERFECTED AND LAKESIDE BRANDS

Internal Diameter	4-ply	5-ply	6-ply
½ inch	$0.51	$0.63	$0.76
¾ "	.67	.83	1.00
1 "	.83	1.03	1.24
1¼ "	1.04	1.30	1.56
1½ "	1.25	1.56	1.87
1¾ "	1.45	1.81	2.17
2 "	1.66	2.07	2.49
2¼ "	1.87	2.33	2.80
2½ "	2.08	2.60	3.12

AIR BRAKE HOSE

PERFECTED

In 22 inch lengths, or any length desired up to 50 feet, with capped ends.

No extra charge for short lengths.

Internal Diameter		
1 inch, 4 ply	per foot	$0.83
1¼ " 4 "	"	1.04

AIR AND STEAM DRILL HOSE

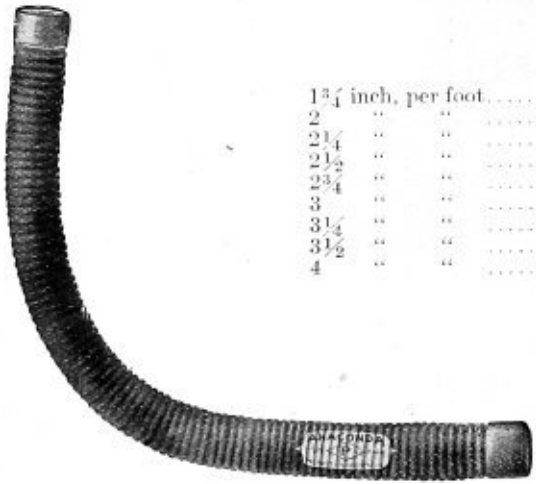
PERFECTED AND LAKESIDE BRANDS

Internal Diameter	4-ply	5-ply	6-ply
¾ inch	$0.67	$0.83	$1.00
1 "	.83	1.03	1.24
1¼ "	1.04	1.30	1.56
1½ "	1.25	1.56	1.87
2 "	1.66	2.07	2.49
2¼ "	1.87	2.33	2.80
2½ "	2.08	2.60	3.12

The Perfected is the Best Drill Hose in the World

If Canvas Cover is desired, we charge as 1-ply extra. We furnish, where desired, a hose with a Canvas Cover, using above list, viz., in 4 -ply, 3-ply inside, and 1-ply outside, etc.

ANACONDA ENGINE AND TENDER HOSE CONNECTION



1¾ inch, per foot	$0.87
2 " "	1.00
2¼ " "	1.12
2½ " "	1.25
2¾ " "	1.37
3 " "	1.50
3¼ " "	2.02
3½ " "	2.17
4 " "	2.50

PERFECTED HOT WATER WASHOUT HOSE

FOR RAILROADS

This Label on every 25 feet

This hose is especially designed for Railroad use as a Washout Hose. It will conduct Hot Water up to 200 lbs. pressure, and Steam up to 20 lbs.

The outer cover or jacket is composed of the same compound as the inner tube.

It will not harden or crack with heat, either from the fire box or the steam and water which it is conducting.

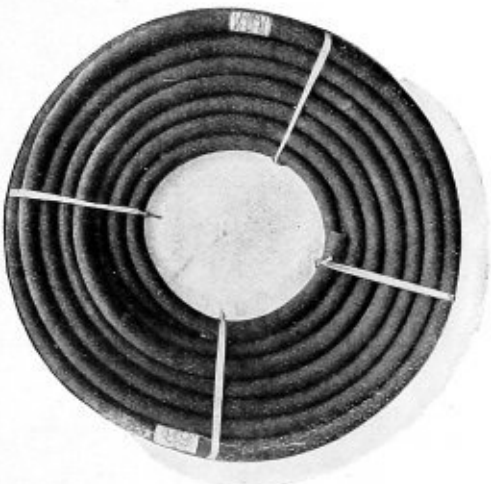
As a hot water conductor it has no equal.

Made in any length up to 50 feet.

Int. Diameter	5-ply	6-ply	7-ply	8-ply
1 inch	$0.83	$1.03	$1.24	$1.45
1¼ "	1.04	1.30	1.56	1.82
1½ "	1.25	1.56	1.87	2.18
1¾ "	1.45	1.81	2.17	2.53
2 "	1.66	2.07	2.49	2.90
2¼ "	1.87	2.33	2.80	3.27
2½ "	2.08	2.60	3.12	3.64

PERFECTED HOSE

For Pneumatic Tubes



Our Perfected Air Hose is made for use in connection with Drills, Hammers, Hoists, Riveters, Mining Machines, etc. This hose has over the plies of duck a layer of rubber, on which is braided a seamless jacket of very strong material, the usual rubber cover being put over this. This method of construction adds not only to the hydraulic strength of the hose, but adds very greatly to its wearing qualities, doing away entirely with the necessity of wire winding.

Internal Diameter	3-Ply	4-Ply	5-Ply	6-Ply
⅜ inch	$0.35	$0.43	$0.51	$0.63
½ "	.43	.51	.63	.76
¾ "	.51	.67	.83	1.00
1 "	.67	.83	1.03	1.24
1¼ "	.85	1.04	1.30	1.56
1½ "	1.02	1.25	1.56	1.87
2 "	1.34	1.66	2.07	2.49

PEERLESS ACID HOSE

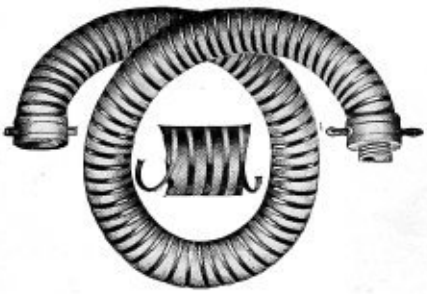
Internal Diameter	⅛ Lining	⅜ Lining	¼ Lining
¾ inch, 4-ply, per foot	$0.75	$0.90	$1.10
1 " " "	1.00	1.15	1.35
1¼ " " "	1.15	1.35	1.55
1½ " " "	1.30	1.55	1.80
2 " " "	1.55	1.85	2.25
2¼ " " "	1.70	2.10	2.50
2½ " " "	1.85	2.30	2.75
3 " " "	2.25	2.75	3.25
3½ " " "	2.75	3.25	3.75
4 " " "	3.25	3.75	4.25

5 or 6 ply made at an additional cost of 25 per cent for each added ply.

PEERLESS STEEL-CLAD SUCTION HOSE

Peerless Steel-Clad Suction Hose has become a general favorite among firemen. It has been adopted as the standard by some of the largest city fire departments in the United States and foreign countries.

We guarantee this hose in every respect, and can repair it when damaged.

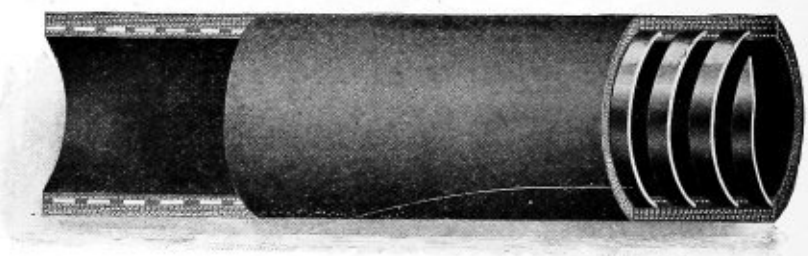


Internal Diam.,	2	inch	per foot,		$2.60
" "	2½	"	"		3.50
" "	3	"	"		4.50
" "	3½	"	"		5.50
" "	4	"	"		6.50
" "	4½	"	"		7.50
" "	5	"	"		8.50
" "	5½	"	"		9.50
" "	6	"	"		10.50
" "	6½	"	"		12.00
" "	7	"	"		13.50
" "	7½	"	"		15.00
" "	8	"	"		16.50
" "	9	"	"		19.50
" "	10	"	"		22.50
" "	12	"	"		27.50

SMOOTH-BORE SUCTION HOSE

We carry in stock 3 and 4 inch, in 10, 12, 15, and 20 feet. Any length to order up to 50 feet.

The galvanized iron coil in this hose is securely enclosed in smooth rubber walls, and is thereby protected from the action of water passing through it, and the friction occasioned by the rough inside surface of ordinary plain suction is entirely avoided.



Internal Diam.,	2	inch	per foot,		$2.60
" "	2½	"	"		3.50
" "	3	"	"		4.50
" "	3½	"	"		5.50
" "	4	"	"		6.50
" "	4½	"	"		7.50
" "	5	"	"		8.50
" "	5½	"	"		9.50

Internal Diam.	6	inch	per foot,		$10.50
" "	6½	"	"		12.00
" "	7	"	"		13.50
" "	7½	"	"		15.00
" "	8	"	"		16.50
" "	9	"	"		19.50
" "	10	"	"		22.50
" "	12	"	"		27.50

HARD RUBBER SUCTION HOSE

4-PLY—INTERNAL DIAMETER

This Suction Hose is less expensive than that made on wire, and will answer for many purposes.

¾ inch..per foot, $0.65 1¼ inch..per foot, $0.93
1 " " .75 1½ " " 1.13

We do not recommend Hard Rubber Suction Hose in sizes larger than 1½ inch. If a stiff, low-priced suction hose is desired, we can usually furnish some one of the many varieties of Wire Suction Hose which we carry in stock up to 3 inches internal diameter.

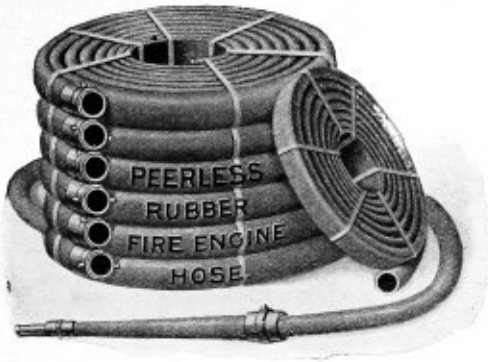
AGRICULTURAL SUCTION HOSE

Internal Diam.,	¾	inch	per foot,		$0.65
" "	1	"	"		.75
" "	1¼	"	"		.93
" "	1½	"	"		1.13
" "	1¾	"	"		1.31
" "	2	"	"		1.50
" "	2¼	"	"		1.69
" "	2½	"	"		1.88
" "	3	"	"		2.36

SMALL SUCTION HOSE

Internal diam. inch	Spiral Brass Wire	Tinned Iron Wire
¾	$0.77	$0.70
1	1.00	.90
1¼	1.25	1.15
1½	1.65	1.50
1¾	2.10	1.90
2	2.50	2.30

RUBBER FIRE - ENGINE HOSE



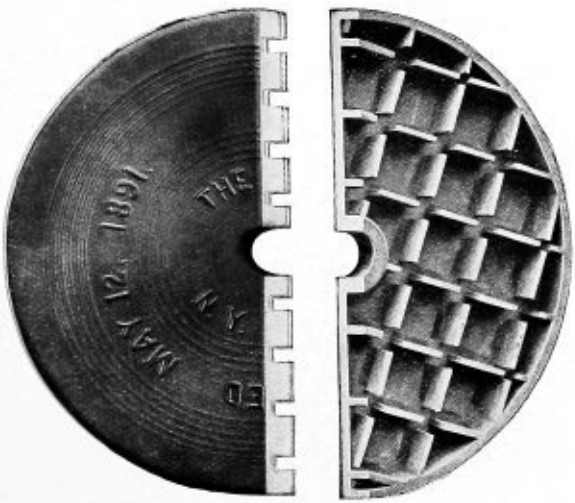
PERFECTED, (P), PEERLESS, AND LAKESIDE

In the manufacture of Mechanical Rubber Goods there is nothing made which calls for greater care than Fire Hose. This is true in both the quality of the material and labor. In our hose especial care is made in the selection of the duck, which is made to order for us from Texas Cotton. The fine Para used therein, being the best, undergoes a thorough method of preparation before it is used.

1½ inch, 4-ply	per foot,	$0.75	2¼ inch, 4-ply	per foot,	$1.12
2 " "	"	1.00	2½ " "	"	1.15

PEERLESS LANDING PADS

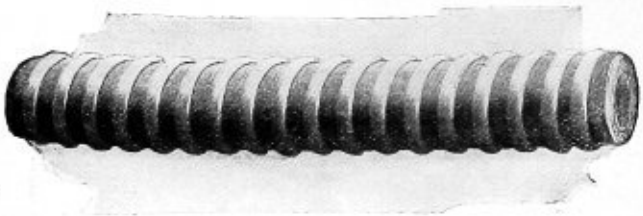
In Ordering, Give Outside Diameter of Sliding Pole



22 Inches Diameter
Is Self-Inflating

It is composed of the finest Para Rubber, in one piece, provided with a plurality of pillows or ribs, which are so arranged as to normally support the pad or cushion in its inflated condition, but which will yield to outside pressure, so that when a person steps or lands on the pad, the same will yield and permit of the escape of the air within the cells of the pad, and when pressure is removed the said cells will refill *automatically* through apertures provided in the pad, so that as soon as it has served its functions for one person it is *instantly* ready to receive another, without any attention on the part of the persons for whose use it is especially designed. The hole in pad is so constructed as to be of such a size as to enable the pad to be held to the sliding pole by frictional contact of the parts, thereby enabling cleaners of floors to remove the pad by simply sliding it up the pole the desired distance, where the friction will hold it without other support. Last, but not least, its great durability makes it the cheapest device yet introduced. Price, each, $20.00.

LIST FOR WIRE-WINDING HOSE



List prices for Winding Steam, Water, and Brewers' Hose with Flat, Round, or Half Round Tinned-Steel Wire.

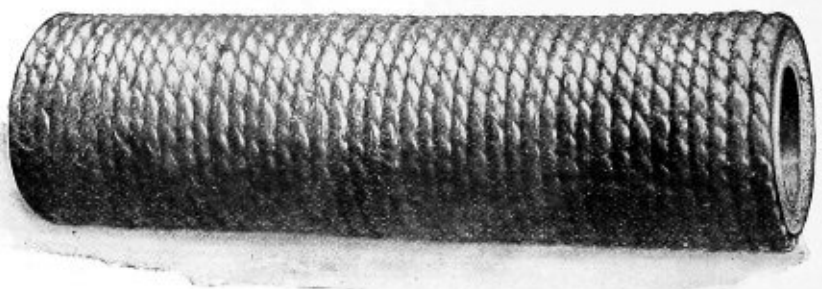
Size per foot	3-Ply	4-Ply	5-Ply	6-Ply
½ inch	$0.09	$0.10	$0.11	$0.12
¾ "	.11	.12	.13	.14
1 "	.13	.14	.15	.16
1¼ "	.15	.16	.17	.18
1½ "	.18	.19	.20	.21
1¾ "	.20	.21	.22	.23
2 "	.23	.24	.25	.26
2¼ "	.25	.26	.27	.28
2½ "	.27	.28	.29	.30

LIST FOR WIRE-BRAIDING HOSE

For All Kinds of Rubber Hose

Internal Diam. per foot	3-Ply	4-Ply	5-Ply	6-Ply
½ inch	$0.09	$0.11	$0.14	$0.16
¾ "	.14	.19	.24	.28
1 "	.18	.24	.30	.36
1¼ "	.22	.29	.36	.43
1½ "	.26	.34	.42	.51
1¾ "	.29	.38	.48	.57
2 "	.37	.49	.61	.74
2¼ "	.44	.59	.74	.89
2½ "	.51	.68	.85	1.02
3 "	.54	.72	.90	1.08

LIST FOR MARLINE-WINDING HOSE

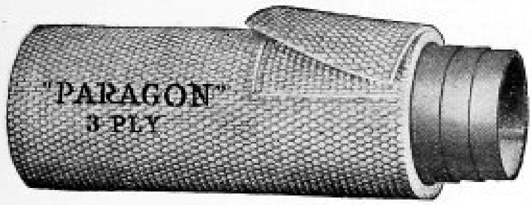


List Prices for Winding Steam Hose with Marline

Size per foot	3-Ply	4-Ply	5-Ply	6-Ply
½ inch	$0.09	$0.10	$0.11	$0.12
¾ "	.11	.12	.13	.14
1 "	.13	.14	.15	.16
1¼ "	.15	.16	.17	.18
1½ "	.18	.19	.20	.21

Size per foot	3-Ply	4-Ply	5-Ply	6-Ply
1¾ inch	$0.20	$0.21	$0.22	$0.23
2 "	.23	.24	.25	.26
2¼ "	.25	.26	.27	.28
2½ "	.27	.28	.29	.30

EUREKA COTTON RUBBER-LINED HOSE



A Three-ply Hose

The most perfectly constructed fire hose ever produced. Treated mildew and rot-proof by best known method of hose preservation. Guaranteed to stand a water pressure of 400 pounds per square inch. Is made in three plies. The advantage of this construction is that the three plies are woven simultaneously, and are therefore perfectly uniform in tension and construction throughout. The outer ply may be worn away by heavy usage, and the inner plies yet remain as serviceable hose.

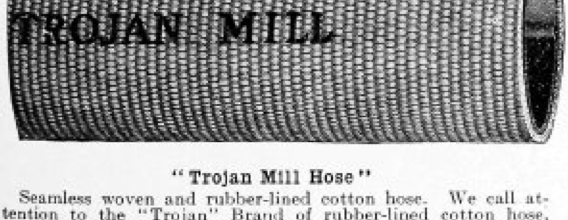
2-inch internal diameter	per foot, $0.90
1½ " " "	" .80
1¼ " " "	" .70
1 " " "	" .60

"Underwriter Standard" Fire Hose Two-ply

The Standard Factory Fire Hose approved and accepted by "The Associated Factory Mutual Fire Insurance Companies," "Factory Insurance Association," "National Fire Protection Association," and "Underwriter Laboratories of Chicago," for factory fire protection. Antiseptically treated by the best known method, approved by Underwriters, for prevention of mildew and rot.

Stripe consists of four warp-strands of red, and four of blue, separated by four of white, so as to produce a longitudinal stripe of red, white, and blue.

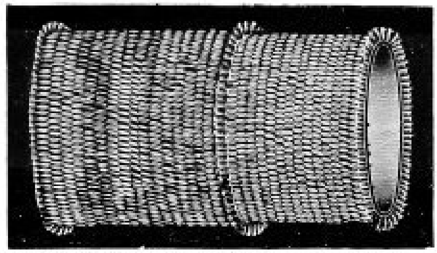
2½-inch internal diameter	per foot, $0.80
1⅝ " " "	" 70



"Trojan Mill Hose"

Seamless woven and rubber-lined cotton hose. We call attention to the "Trojan" Brand of rubber-lined cotton hose, which is a better made hose than any other of equal price in the market, and will stand a pressure of 300 pounds per square inch.

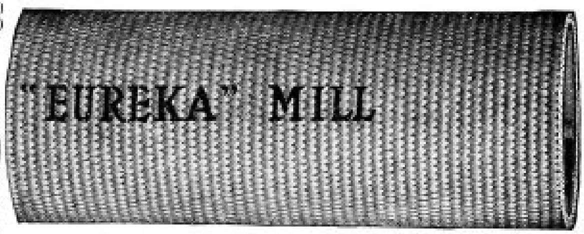
1-inch internal diameter	per foot, $0.35
1¼ " " "	" .45
1½ " " "	" .50
2 " " "	" .60
2¼ " " "	" .65
2½ " " "	" .70
3 " " "	" 1.00
3½ " " "	" 1.50
4 " " "	" 2.00



G. B. C. & Co. Best Quality Heavy Jacket Hose

Economical, because materials used are of the highest grade. Treated mildew and rot-proof by best known method of hose preservation. Is a heavy, double hose, and is an excellent fire hose for use in woolen, cotton, silk, print, knit goods, carpet-mills, breweries, hospitals and other institutions, etc. Safe for 400 pounds water pressure per square inch.

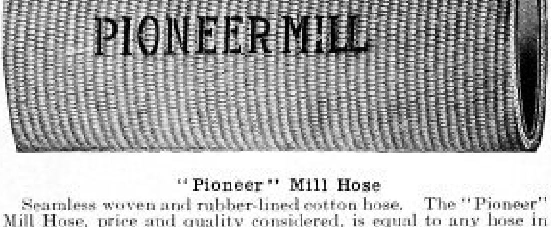
2 inch........................	per foot, $0.85
2½ "	" 1.00



"Eureka" Mill Hose

Seamless woven and rubber-lined mildew-proof cotton hose for mill and factory fire purposes. The "Eureka" Mill is a single-ply hose, and intended particularly for mills, warehouses, public institutions, hotels, and all places where hose is kept attached to stand-pipes, fire-pumps, etc. It will stand a pressure of 350 pounds per square inch.

1 inch internal diameter	per foot, $0.35
1¼ " " "	" .45
1½ " " "	" .50
2 " " "	" .60
2¼ " " "	" .65
2½ " " "	" .70
3 " " "	" 1.00
3½ " " "	" 1.50
4 " " "	" 2.00



"Pioneer" Mill Hose

Seamless woven and rubber-lined cotton hose. The "Pioneer" Mill Hose, price and quality considered, is equal to any hose in the market; it will stand a pressure of 250 pounds per square inch.

1 inch internal diameter	per foot, $0.35
1¼ " " "	" .45
1½ " " "	" .50
2 " " "	" .60
2¼ " " "	" .65
2½ " " "	" .70
3 " " "	" 1.00
3½ " " "	" 1.50
4 " " "	" 2.00

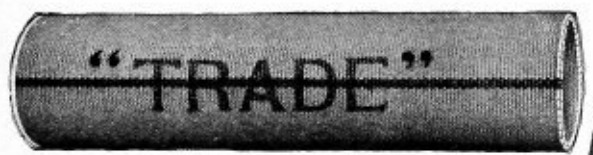
LINEN HOSE

Eureka Fire Hose Manufacturing Co.

"20th Century" Linen Hose

Stripe consists of four warp strands each, red, white and blue, laid side by side in order named, Made in any length and labeled strictly in accordance with the requirements and specifications of the Associated Factory Mutual Insurance Companies and National Fire Protection Association, as an unlined linen fire hose for indoor factory fire protection. Pressure, 550 pounds.

¾-inch	internal	diameter	.....	per	foot,	$0.24
1	"	"	.....	"		.27
1¼	"	"	.....	"		.30
1½	"	"	.....	"		.33
2	"	"	.....	"		.42
2¼	"	"	.....	"		.46
2½	"	"	.....	"		.50
3	"	"	.....	"		.65



"Trade" Linen Hose

The stripe in this brand consists of three red and two brown strands. Passed by the New York Board of Fire Underwriters. Pressure, 400 pounds.

¾-inch	internal	diameter	.....	per	foot,	$0.18
1	"	"	.....	"		.20
1¼	"	"	.....	"		.22
1½	"	"	.....	"		.25
1¾	"	"	.....	"		.28
2	"	"	.....	"		.30
2¼	"	"	.....	"		.33
2½	"	"	.....	"		.35
3	"	"	.....	"		.50

RUBBER LINED LINEN HOSE

¾-inch	internal	diameter	.....	per	foot,	$0.30
1	"	"	.....	"		.35
1¼	"	"	.....	"		.45
1½	"	"	.....	"		.50
2	"	"	.....	"		.60
2¼	"	"	.....	"		.65
2½	"	"	.....	"		.70
3	"	"	.....	"		1.00

"Worthy" Linen Hose

Our red, white and blue color stripe in this brand is separated, having the plain unbleached yarn between colored strands. Labeled strictly in accordance with the "National Fire Protection Requirements" and acceptable to the Factory Mutuals. Pressure, 500 pounds.

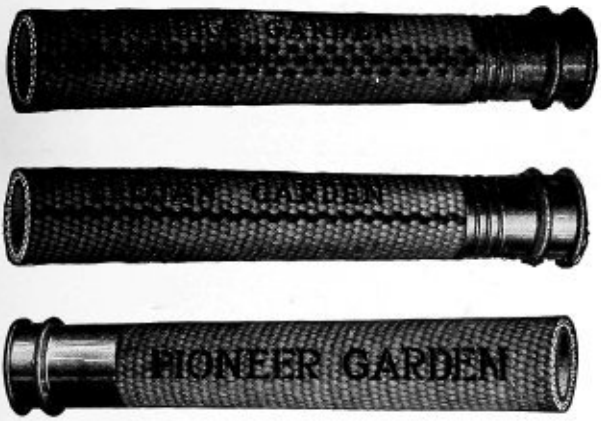
¾-inch	internal	diameter	.....	per	foot,	$0.18
1	"	"	.....	"		.20
1¼	"	"	.....	"		.22
1½	"	"	.....	"		.25
1¾	"	"	.....	"		.28
2	"	"	.....	"		.30
2¼	"	"	.....	"		.33
2½	"	"	.....	"		.35
3	"	"	.....	"		.50

"Red Ball" Linen Hose

Stripe consists of a red strand and one of orange. Passed by the New York Board of Fire Underwriters. Pressure, 300 pounds.

¾-inch	internal	diameter	.....	per	foot,	$0.18
1	"	"	.....	"		.20
1¼	"	"	.....	"		.22
1½	"	"	.....	"		.25
1¾	"	"	.....	"		.28
2	"	"	.....	"		.30
2¼	"	"	.....	"		.33
2½	"	"	.....	"		.35
3	"	"	.....	"		.50

COTTON RUBBER-LINED GARDEN HOSE



"EUREKA" GARDEN HOSE

The Standard Cotton Rubber-lined Garden Hose of the world. Stripe red, white and blue. Pressure of 400 pounds water per square inch.

"TROJAN" GARDEN HOSE

A high-grade hose, equal to any cotton garden hose at the price. Stripe red and green. Pressure, 300 pounds water per square inch.

"PIONEER" GARDEN HOSE

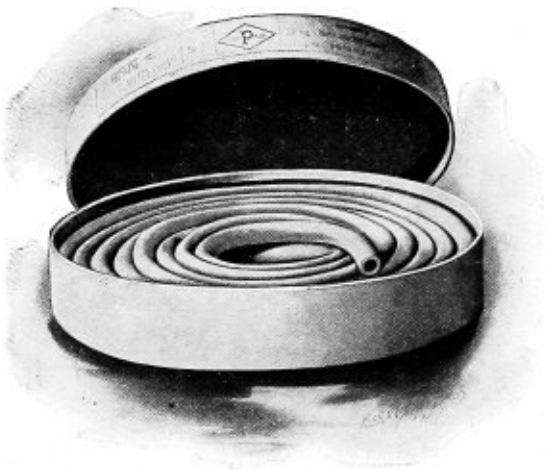
A plain Cotton Rubber-lined Garden Hose of good quality and established merit. Pressure, 250 pounds water per square inch.

½-inch Garden Hose ..... per foot, $0.20
¾ " " " ..... " " .25
1 " " " ..... " " .35

RUBBER TUBING

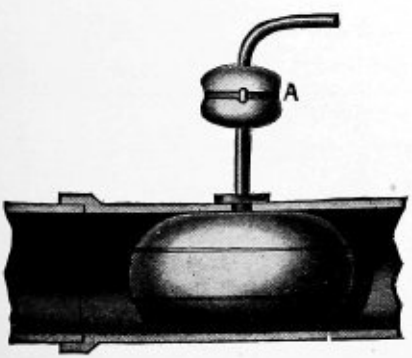
Machine-made tubing in fifty-foot lengths, either plain or corrugated surface.

Int. Diam. inches	Pure per foot	Cloth Insertion per foot
1/8	$0.08	$0.10
3/16	.12	.14
1/4	.16	.18
5/16	.18	.20
3/8	.20	.23
1/2	.25	.28
5/8	.30	.33
3/4	.35	.38
1	.45	.50



Extra Soda Water Tubing, finest Para Rubber, ⅜-inch, 6-ply ..... per foot, $0.30
Acid Tubing, extra quality ..... per lb., 2.50

PEERLESS PATENT IMPROVED GAS BAG



These Gas Bags are used to stop the flow of gas while repairing or making alterations in gas mains. The indicator A shows unerringly when the bag has been sufficiently inflated to pack the main, and when pumping should be stopped.

3-inch Gas Bag ..... each, $0.60
4 " " " ..... " .80
5 " " " ..... " 1.05
6 " " " ..... " 1.75
8 " " " ..... " 2.65
10 " " " ..... " 3.75
12 " " " ..... " 5.00
16 " " " ..... " 8.25
20 " " " ..... " 12.00
24 " " " ..... " 17.00
30 " " " ..... " 27.50

HYDRAULIC MINING HOSE

COTTON DUCK

Triple Sewed

Diameter inches	Duck	Per foot	Diameter inches	Duck	Per foot	Diameter inches	Duck	Per foot
6	2/0	$0.36	6	6/0	$0.40	6	10/0	$0.44
6	4/0	.38	6	8/0	.42	6	12/0	.50

Any Size to order.

SEAMLESS COTTON HOSE

HYDRAULIC

List January 20, 1904

Diameter inches	Price per Foot						
	2/0	4/0	6/0	8/0	10/0	12/0	14/0
4	$0.10½	$0.11½	$0.12¾	$0.14	$0.15	$0.16	$0.17½
5	.12½	.14	.15½	.16½	.18	.19½	.21
6	.14½	.16	.18	.19	.21	.22½	.24½
7	17	.18½	.20	.22	.23½	.26	.28
8	.19	.21	.23	.25	.27	.29	.31½
10	.24	.26½	.29	.31	.33½	.37	.40
12	.29	.31½	.35	.37	.40	.43	.48½

SEAMLESS COTTON HOSE

CONDUCTING

A Strong and Inexpensive Hose for Conducting in Mines, etc.

Full Rolls about 400 Feet. Any Length Desired

Diam. inches	Per foot	Diam. inches	Per foot	Diam. inches	Per foot
¾	$0.04	2½	$0.10	7	$0.28
1	.04½	3	.12	8	.32
1¼	.05	4	.16	9	.36
1½	.06	5	.20	10	.40
2	.08	6	.24	12	.48

AUTOMATIC EXPANSION RING HOSE COUPLINGS

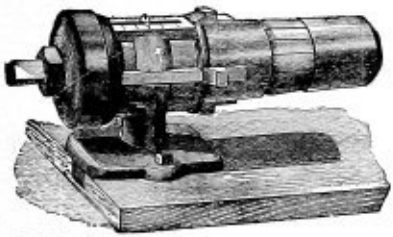
Size	1½	2	2½	3	3½	4	4½
Price per pair	$2.00	2.50	3.00	10.50	12.00	15.00	18.00

Half Couplings, two-thirds list price.

Underwriters Couplings, 2½ inch, per pair $4.50.

AUTOMATIC RING EXPANDER

FOR ATTACHING AND DETACHING COUPLINGS



Automatic Ring Expander, 1¼, 1½, 2, 2½ inch	each	$12.00
" " " 3 inch	"	15.00
" " " 3½, 4, 4½ inch	"	30.00
Extra Cutters for Expanders	per set of two	1.50

Expansion Rings	1¼	1½	2	2½
Per dozen	$1.15	1.25	1.50	1.75

HOSE COUPLINGS

Size, inches	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	8
Price, Hose Gauge, per doz.,	$2.40	2.40	4.40	10.00	14.00	24.00	48.00	75.00	.....	.....	.....	.....	.....	.....
Price, Iron Pipe Gauge, per doz.,	$2.65	2.65	4.65	10.50	15.00	26.00	50.00	76.00	120.00	150.00	216.00	250.00	350.00	504.00

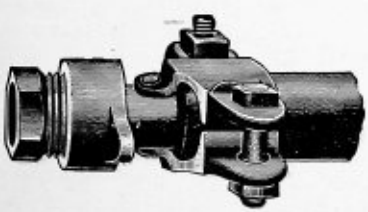
For either part of Coupling, two-thirds list price.

STEAM HOSE COUPLINGS

EXTRA HEAVY AND LONG SHANK

Size, inches	½	¾	1	1¼	1½	2	2½
Price per pair	$1.25	1.25	1.50	2.00	2.50	3.50	6.00

AIR DRILL HOSE COUPLINGS



Size, inches	⅜–½–¾	1	1¼	1½
Each End	$1.60	1.80	2.20	3.00

SHERMAN'S HOSE CLAMPS

Made of Finished Brass and Will not Rust

WATER HOSE

Size, inches	½	¾	1	1¼	1½	2	2½	3	3½	4
Price, per dozen	$1.50	1.50	2.00	2.50	3.00	4.00	7.00	10.00	24.00	30.00

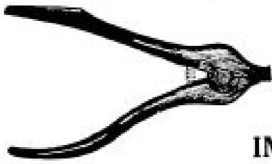
STEAM HOSE

Size, inches	½	¾	1	1¼	1½
Price, per dozen	$2.00	2.00	2.50	3.00	3.50

CALDWELL'S PATENT HOSE STRAP

Numbers	2	4	6	8	10	12	14	16	18	20
Size hose, inches	½	½	¾	¾	1	1	1¼	1¼	1½	1½
Length, inches	3⅜	3¾	4⅛	4¾	5	5⅜	6	5⅜	6¾	7⅛
Price, per dozen	$0.40	.40	.60	.60	.80	.80	1.00	1.00	1.20	1.20

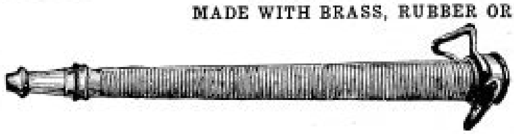
PATENT HOSE STRAP FASTENER



Numbers	1	2
Size, inches	½ to 1	1¼ to 1½
Price, per dozen pair	$6.00	9.00

IMPROVED SWIVEL HANDLE PLAY PIPE

MADE WITH BRASS, RUBBER OR LEATHER TUBE, ANY DESIRED LENGTH

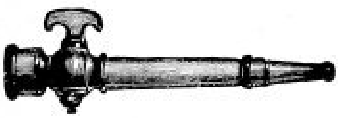


Size, inches	2	2½	2½	2½
Length, inches	20	24	30	36
Wound and painted, each	$9.00	11.00	12.00	15.00
Plain brass, each	7.50	9.50	11.00	13.50

UNDERWRITERS PLAY PIPE

Made according to the specifications of the Associated Factory Mutual Insurance Company of Boston. Size 2½ x 30 inches. Each, $11.00

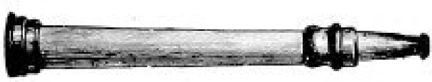
HOSE PIPE, WITH COCK



Size, inches	¾	¾	1	1	1¼	1½	1½
Length, inches	6¾	8	8	12	15	12	15
Iron Pipe Thread, per dozen	$12.20	14.20	18.00	23.00	59.00	60.00	74.00

Size, inches	2	2	2½	2½	2½
Length, inches	12	20	12	15	24
Iron Pipe Thread, per dozen	$83.00	113.00	153.00	163.00	185.00

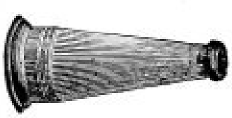
HOSE PIPES, SCREW TIP



Size, inches	¾	¾	1	1	1¼	1¼	1½	1½
Length, inches	7½	12	8½	12½	12	15	13	15
Iron Pipe Thread, per dozen	$9.20	11.20	11.20	13.20	21.20	25.00	27.50	32.50

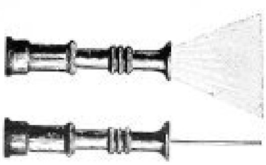
Size, inches	2	2	2	2½	2½	2½	2½	2½
Length, inches	12	15	20	15	20	24	30	36
Iron Pipe Thread, per dozen	$41.00	48.00	53.00	78.50	99.50	103.50	150.00	163.00

STUB NOZZLES



Size, inches	¾	¾	1	1¼	1¼
Length, to screw	3	8	4	4¾	12
Iron Pipe, per dozen	$5.00	8.00	6.25	13.75	19.75

Size, inches	1½	1½	2	2	2½	2½
Length, to screw	5¾	12	6¾	12	7½	12
Iron Pipe, per dozen	$19.75	24.00	29.00	39.00	39.50	60.00



GEM HOSE NOZZLE

Size, ins.	¾	1
Price, per dozen	$9.00	15.00

MAGIC HOSE NOZZLE

Size, inches	¾	1
Price, per doz. with screw tip	$12.00	15.00

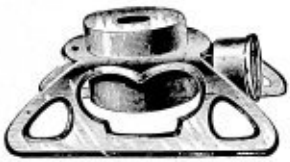
If nickel plated, 75 cents per dozen net, extra.

SPRINKLERS

These Sprinklers are all for ¾-inch Hose

BLAKE

Per dozen $4.00



EVANSTON

Jap. Per dozen $5.00

PRESTON

Japanned, with brass head and arms. Per dozen.....$12.00

CYCLONE

Brass head and arms.
Per dozen $18.00

THE RING

Brass. Per dozen $27.00

MIDGET

Ball bearing brass arms.
Per dozen $12.00

THE GOLF

The Golf Top sprinkler is recommended more particularly where the water pressure is heavy. 5½ feet high. Per dozen $28.00

HARTFORD

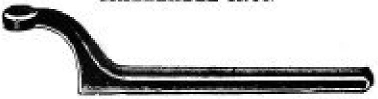
No. 2.	2 ft. high.	Per doz.	$10.80
No. 4.	4 " "	" "	12.00
No. 6.	6 " "	" "	14.00

PUTTING GREEN

45 inches high; arms 13 inches Long. Brass arms.
Per dozen $42.00

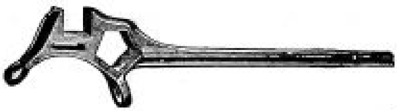
COMMON SPANNER

MALLEABLE IRON



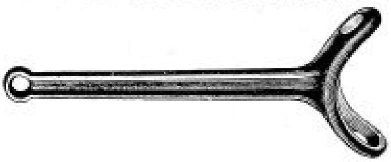
1½ inch.............................per doz.,$1.80
2 " .... " 2.40
2½ " .... " 3.00

SPANNER AND HYDRANT WRENCH COMBINED



Per doz..$12.00

REVERSIBLE SPANNER



Per doz..$6.00

SIAMESE WITH PATENT SWIVEL ATTACHMENT

Fig. A

2½ inch

Price each..$10.00

Fig. B

HOSE VALVES

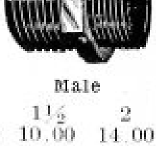
CHICAGO PATTERN

Size, inches..	1	1¼	1½	2	2½
Price each...	$3.15	3.70	4.75	7.00	8.50

All Valves furnished with leather discs and with either wheel or tee handle.

HOSE NIPPLES

Male and Female

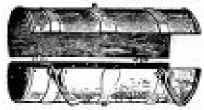


Male

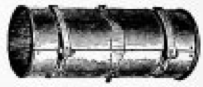
Size, inches.	½	¾	1	1¼	1½	2
Per doz.....	$3.50	3.50	5.00	9.00	10.00	14.00

Size, inches....	2½	3	3½	4	5
Per doz.........	$28.00	40.00	50.00	75.00	90.00

NEELY'S HOSE LEAK STOP



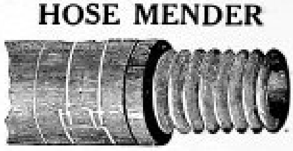
Open



Closed

It is lined with rubber and so constructed that it can securely bind the hose so that the water cannot escape. It can be applied instantaneously. Made in two sizes, for 2½ and 2 inch hose.
Each...$3.00

HOSE MENDER



Size, inches..	¾	1	1¼	1½	2	2½
Iron per doz	$0.60	.75	.....	....	....	.....
Brass "	$....	...	3.00	4.00	7.00	10.00

WOODEN HOSE MENDERS

½ inch..per 100, $..... ¾ inch..per 100, $.....

SINGLE HYDRANT GATES

These gate valves are made with a full 2½ inch waterway, valve lifting out of place; they are used next to the hydrant, so that one stream may be stopped without interfering with the others.
Each.........................$10.00

HOSE CAPS

Size, inches..	¾	1	1¼	1¼	2	2½	3	3½	4
Per dozen....	$4.00	6.00	8.00	10.00	15.00	24.00	31.00	39.00	43.00

HOSE REDUCERS

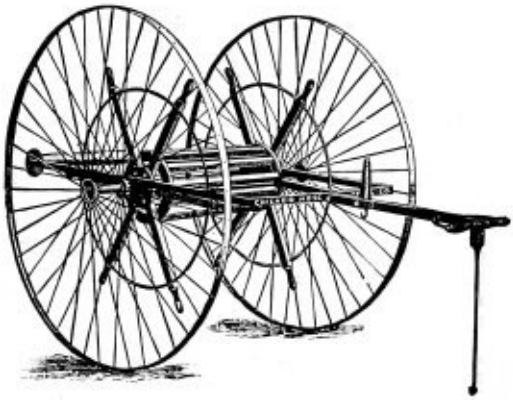
Size inches.	1x¾	1¼x¾	1¼x1	1½x¾	1½x1	1½x1¼
Per doz...	$6.50	8.00	10.00	11.50	11.50	12.00

Size, inches..	2x¾	2x1	2x1¼	2x1½	2½x¾	2½x1
Per doz....	$13.00	14.00	16.00	18.00	20.00	22.00

Size, inches..	2½x1¼	2½x1½	2½x2	3x2	3x2½
Per doz.....	$23.00	24.00	26.00	30.00	36.00

HOSE REELS
PORTABLE WAREHOUSE

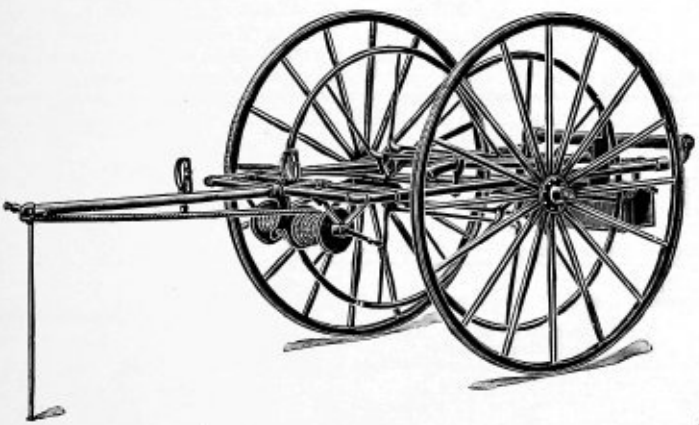
Iron Frame and Wood Wheels



Iron Frame and Wheels

LIST OF IRON AND WOOD FRAME

No.	Extreme Width	Extreme Length	Size Wheels	Capacity, Rubber Hose	Each
1	36 in.	7 ft. 8 in.	56 in.	500 ft. 2½ in.	$40.00
2	36 "	7 " 8 "	48 "	300 " 2½ "	66.00
3	32½ "	6 " 2 "	42 "	200 " 2½ "	53.00
4	31 "	5 " 7 "	36 "	200 " ¾ " 150 " 1 " 100 " 1½ "	36.00



WIRT'S FIRE JUMPER
Style IX

Wood wheels has rope reel, drag rope, tool box, axe, nozzle holder and friction roller.

Number of Jumper	4½	5½
Height of Wheels	48 in.	52 in.
Extreme width	54 in.	54 in.
Weight complete	300lbs.	350lbs.
Capacity 2½ inch Double Jacket Fire Hose	250 ft.	350 ft.
Capacity 2½ inch Cotton Rubber-Lined Mill Hose	400 ft.	600 ft.
Each	$90	$100

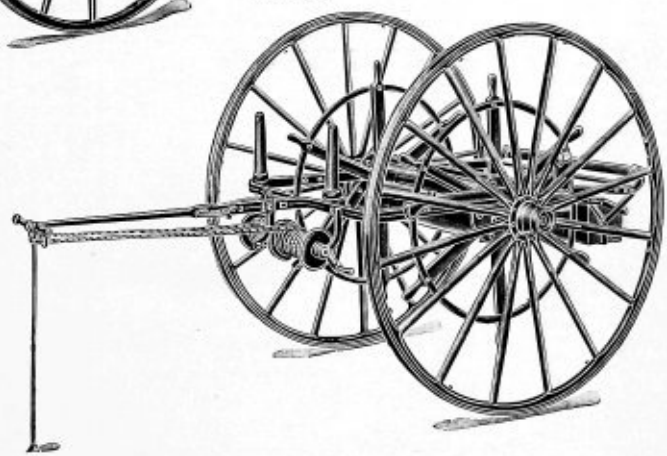
Without rope reel, rope and axe, deduct $20 from list.

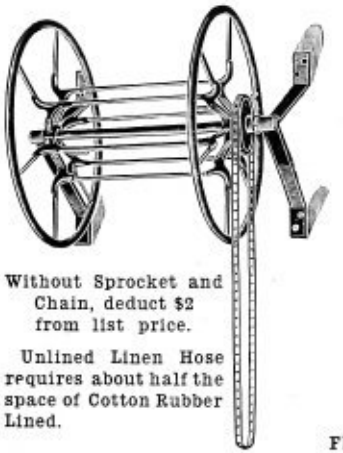
HAND HOSE CART
No. 570

Solid steel frame, forged pole pole support, 62 inch Sarven wheels, steel axle, tool box, friction roller, two cone pipe holders, forged hand holds on tongue, rope reel and fifty feet of rope. Handsomely painted and striped.

Capacity 800 to 1,000 feet of 2½ inch Cotton Rubber Lined Hose.

Price..... $115.00





Without Sprocket and Chain, deduct $2 from list price.

Unlined Linen Hose requires about half the space of Cotton Rubber Lined.

WIRT'S HOSE REELS

BRACKET REEL

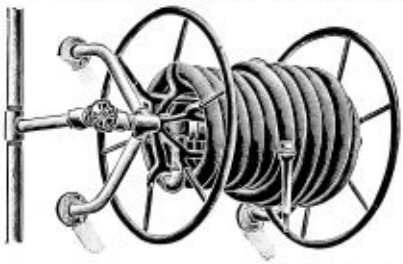
With Sprocket and Chain Attachment for Reeling on Hose. Very Convenient and Capable of Sustaining a Great Weight

Number of Reel	200	201	202
Diameter of Reel	30 in.	30 in.	30 in.
Outside Length of Reel	26 "	30 "	34 "
Capacity of 1¼-inch Double Jacket Fire Hose	250 ft.	300 ft.	350 ft.
" " 1½ " " " " "	200 "	250 "	300 "
" " 2 " " " " "	150 "	200 "	250 "
" " 2½ " " " " "	100 "	150 "	200 "
" " 1½ " Cotton Rubber Lined Hose	300 "	400 "	500 "
" " 2 " " " " "	200 "	300 "	400 "
" " 2½ " " " " "	150 "	250 "	350 "
Each	$18.00	$20.00	$22.00

FLOOR REELS

Number of Reels	298	299	300	301	302	303
Diam. of Reel.....inches	24	29	32	34	37	37
Width of Reel between spokes.....inches	11½	15½	19	19	25	31
Capacity 1½-in. Cotton Rubber Lined Mill Hose...feet	100	250	400	500	650	800
Capacity 2-in. Cotton Rubber Lined Mill Hose...feet	75	150	300	350	500	600
Capacity 2½-in. Cotton Rubber Lined Mill Hose...feet	50	100	200	250	400	500
Each	$15.00	$20.00	$25.00	$30.00	$35.00	$40.00

Capacity for Double Jacket Fire Hose about one-half above quantity



ROTARY JOINT REEL

Tubular steel frame and reel with rotary joint to connect with standpipe, allowing flow of water through hose without unreeling when valve is turned on. Especially adapted to hose with heavy walls.

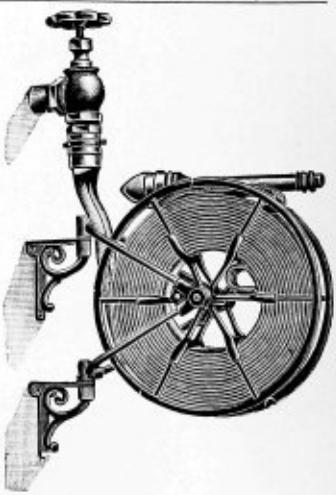
Size	Capacity	Each
¾ in.	300 ft. ¾ in. Rubber Hose	$30.00
1 "	200 " 1 " " "	32.50
1¼ "	150 " 1¼ " " "	35.00
1½ "	200 " 1½ " " Lined Mill Hose	37.50
2 "	150 " 2 " " " " "	40.00
2½ "	100 " 2½ " " " " "	45.00

SWINGING WALL REEL

Made of steel tubing, steel rod and wire, and malleable castings, the strongest and most durable reel made.

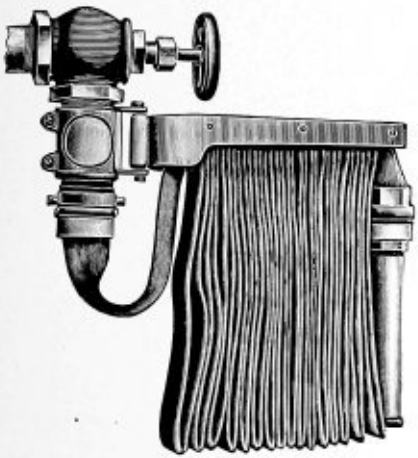
IMPORTANT.—Tension axles are used so that the reel may be adjusted to run tight or loose, as desired. No extra charge for pipe clamps up to and including 4 inches.

Number	Capacity	Size Hose, in.	Description of Hose		Width	Diam.	Each
0	50 ft.	1¼ or 1½	Unlined Linen	One Tier	3 in.	15 in.	$6.00
00	50 "	2	"	"	3¾ "	15 "	6.00
000	50 "	2½	"	"	4⅝ "	15 "	6.00
0½	75 "	1¼ or 1½	"	"	3⅛ "	17 "	6.00
00½	75 "	2	"	"	4¼ "	17 "	6.00
000½	75 "	2½	"	"	4⅝ "	17 "	6.00
1	100 "	1¼ or 1½	"	"	3⅛ "	21 "	6.00
2½	100 "	2	"	"	4¼ "	21 "	6.00
3½	100 "	2½	"	"	4⅝ "	21 "	6.00
2	150 "	1¼ or 1½	"	"	3⅛ "	26 "	6.00
3	150 "	2	"	"	4¼ "	26 "	6.00
4	150 "	2½	"	"	4⅝ "	26 "	6.50
5½	200 "	1¼ or 1½	"	Two Tier	5½ "	21 "	7.00
6½	200 "	2	"	"	8 "	21 "	7.50
7½	200 "	2½	"	"	9 "	21 "	8.00
7	300 "	2½	"	"	9 "	26 "	8.50
8	400 "	2½	"	"	9 "	32 "	11.50
2	50 "	1¼ or 1½	Cotton Rubber-lined Mill	One Tier	3⅛ "	26 "	6.00
3	50 "	2	" " "	"	4¼ "	26 "	6.00
4	50 "	2½	" " "	"	4⅝ "	26 "	6.50
5	100 "	1¼ or 1½	" " "	Two Tier	5½ "	26 "	7.50
6	100 "	2	" " "	"	8 "	26 "	8.00
7	100 "	2½	" " "	"	9 "	26 "	8.50
8	150 "	2½	" " "	"	9 "	32 "	11.50



WIRT'S HOSE RACKS

"ECLIPSE" SWINGING HOSE RACK
Made of Malleable Iron

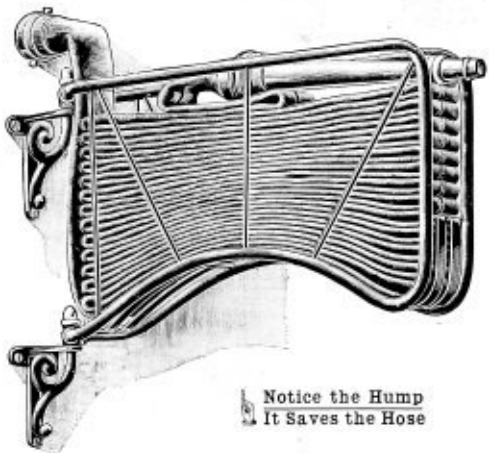


Nos.	Capacity	Price Each
62	25 to 75 feet of 1¼ or 1½ inch Unlined Linen Hose	$5.00
63	25 " 75 " 2 " " "	5.00
64	25 " 75 " 2½ " " "	5.00
65	100 " 150 " 1¼ or 1½ inch Unlined Linen Hose	6.00
66	100 " 150 " 2 " " "	6.00
67	100 " 150 " 2½ " " "	6.00

HUMP SWINGING HOSE RACK

Hump Racks are Attached to Wall Brackets or Pipe Clamps at the Top and Bottom

No extra charge for pipe clamps up to and including 4-inch



Notice the Hump
It Saves the Hose

No.	Capacity feet	Size Hose inches	Description of Hose	Height inches	Length inches	Price Each
A0	50	1¼ or 1½	Unlined Linen	11	22	$5.00
A0X	50	2	"	11	22	5.00
A00	50	2½	"	11	22	5.00
A1	100	1¼ or 1½	"	16	24	6.00
A1X	100	2	"	16	24	6.00
A2	100	2½	"	16	24	6.00
A3	150	1¼ or 1½	"	23	28	7.00
A3X	150	2	"	23	28	7.00
A4	150	2½	"	23	28	7.00
A5	200	1¼ or 1½	"	34	34	7.50
A5X	200	2	"	34	34	7.50
A6	200	2½	"	34	34	8.00
A3	50	1¼ or 1½	Cotton Rubber-lined Mill	23	28	7.00
A3X	50	2	" " "	23	28	7.00
A4	50	2½	" " "	23	28	7.00
A5	100	1¼ or 1½	" " "	34	34	7.50
A5X	100	2	" " "	34	34	7.50
A6	100	2½	" " "	34	34	8.00

The "Standard" Capacity 3 Gallons

FIRE EXTINGUISHERS

The "Standard" Fire Extinguisher is constructed of heavy cold-rolled Lake Superior copper. All of the interior parts are lined with lead, making the Extinguisher absolutely non-corrosive. It is approved for use on passenger and freight vessels by the U. S. Board of Steamboat Inspectors. It is finished in polished copper or red enamel.

Each.....$15.00

WIRT'S GARDEN REELS

K. C. No. 1. An All-Metal Reel

Tubular frame, corrugated iron drum.

Wire arms. Wheels, 7 inches in diameter.

The corrugated drum allows a free circulation of air under the hose and prevents mildew.

Capacity, 100 feet ¾-inch rubber hose.

Weight, 12½ pounds.

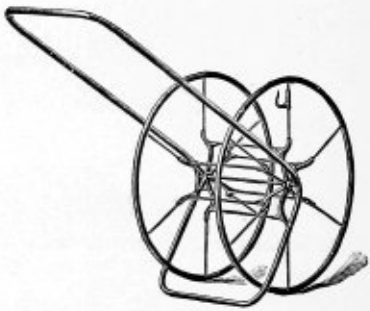
Each.....$2.00

Nos. 10 and 20

TUBULAR ALL-METAL HOSE REEL

Nos. 10 and 20 Have Corrugated Drum

For lawn or garden. Very simple in construction, easily manipulated, and the most durable reel made.

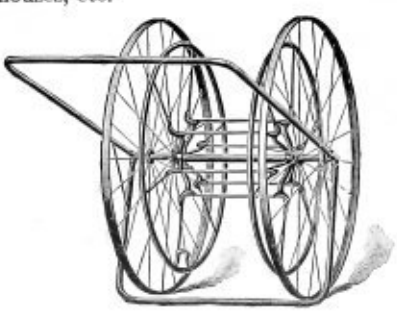


Nos. 30 and 40

Number of Reel	10	20	30	40
Height of Reel in inches	21	24	29	34
Weight of Reel in pounds	18	20	30	75
Capacity of 3-ply ¾-inch Rubber Hose	100 feet	150 feet	400 feet	800 feet
" " 4-ply 1-inch " "	50 "	75 "	150 "	300 "
" " 4-ply 1¼-inch " "	.....	.....	100 "	250 "
" " 1¼-inch Cotton Rubber-lined Hose	.....	100 feet	200 "	500 "
" " 1½-inch " " "	.....	75 "	150 "	400 "
" " 2-inch " " "	.....	.....	100 "	300 "
Each	$3.50	$4.00	$6.50	$25.00

PARK REEL

A tubular iron reel and frame mounted on steel wheels. Tires 1⅛ inch wide. For parks, lawns, greenhouses, etc.



Number of Reel	21	31
Height of Wheels	28-inch	34-inch
Outside width over all	26 "	27 "
Weight of Reel	40 lb.	50-lb.
Capacity of ¾-inch 3-ply Rubber Hose	200 feet	500 feet
" " 1 " 4-ply " "	100 "	200 "
" " 1¼ " " " "	75 "	150 "
" " 1¼ " Cotton Rubber-lined Hose	150 "	300 "
" " 1½ " " " "	100 "	200 "
" " 2 " " " " "	75 "	150 "
" " 2½ " " " " "	50 "	100 "
Each	$7.50	$10.50

ASBESTOS WICKING, PAPER AND CEMENT

WICKING

Wick, in ½ and 1 lb. balls	per lb.,	$0.30
Rope, sizes ¼ inch and up	"	.30
Fibre No. 1, picked	"	.35
" No. 2, "	"	.25
" No. 3, "	"	.15

BUILDING FELT OR PAPER

For Covering Steam Pipes, Hot Air Flues and Sheathing Houses and Floors. Rolls about 100 lbs. ¾, 1, 1¼, 1½ lbs. to Square Yard

36, 40, and 42 inches wide ..... per lb., $0.08

CEMENT FELTING

Covering Capacity 40 square feet, 1 inch thick. When mixed with water it is easily applied.

Per bag $3.00

MILL BOARD

Sheets 40x40 Inches

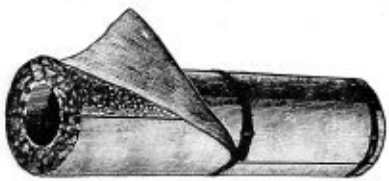
1/32 inch thick	about,	2 lbs.
1/16 " "	"	3¾ "
3/32 " "	"	5½ "
⅛ " "	"	7½ "
3/16 " "	"	11½ "
¼ " "	"	13 "
⅜ " "	"	22½ "
½ " "	"	25 "

Price per lb $0.10

We also keep in stock Mill Board in rolls 36 inches wide, in sizes 1/32, 1/16, 3/32 and ⅛ inch thick, per lb., $0.10

ASBESTOS PIPE COVERINGS AND FITTINGS

W. B. Pipe Covering for Steam and Hot Water Pipes



Asbestos Moulded for High Pressure

List Adopted August 10, 1907

Inside Diameter of Pipe	Price per Lineal foot Cov. Standard Thickness	Price per Lineal foot Cov. 1½ in. Thickness
½ in.	$0.22	$0.46
¾ "	.24	.49
1 "	.27	.52
1¼ "	.30	.56
1½ "	.33	.60
2 "	.36	.64
2½ "	.40	.70
3 "	.45	.76
3½ "	.50	.82
4 "	.60	.88
4½ "	.65	.94
5 "	.70	1.00
6 "	.80	1.10
7 "	1.00	1.20
8 "	1.10	1.35
9 "	1.20	1.50
10 "	1.30	1.65
12 "	1.85	1.85
14 "	2.10	2.10

All Coverings over 14 inches furnished in Segmental form.

Sheets and Blocks	
½ in.	$0.27
¾ "	.27
⅞ "	.30
1 "	.30
1⅛ "	.31
1¼ "	.38
1⅜ "	.42
1½ "	.45
1⅝ "	.49
1¾ "	.53
1⅞ "	.57
2 "	.60
2⅛ "	.64
2¼ "	.68
2⅜ "	.72
2½ "	.75
2⅝ "	.79
2¾ "	.83
2⅞ "	.87
3 "	.90
3¼ "	.98
3½ "	1.05
4 "	1.20

Size of Fittings	Elbows	Tees	Crosses	Globe Valves
½ in.	$0.30	$0.36	$0.48	$0.54
¾ "	.30	.36	.48	.54
1 "	.30	.36	.48	.54
1¼ "	.30	.36	.48	.54
1½ "	.30	.36	.48	.54
2 "	.36	.42	.54	.60
2½ "	.42	.48	.60	.78
3 "	.48	.54	.70	.96
3½ "	.54	.60	.80	1.20
4 "	.60	.75	.95	1.50
4½ "	.72	.90	1.10	1.85
5 "	.90	1.20	1.50	2.25
6 "	1.30	1.60	2.00	2.80
7 "	1.80	2.20	2.80	3.60
8 "	2.40	3.00	3.60	4.40
9 "	3.00	3.80	4.40	5.30
10 "	3.60	4.60	5.20	6.20

Use Asbestos Cement Felting for fittings larger than 12 inches, and for all flanged fittings.

Our Moulded Covering for high pressure is made extra thick for large pipes.

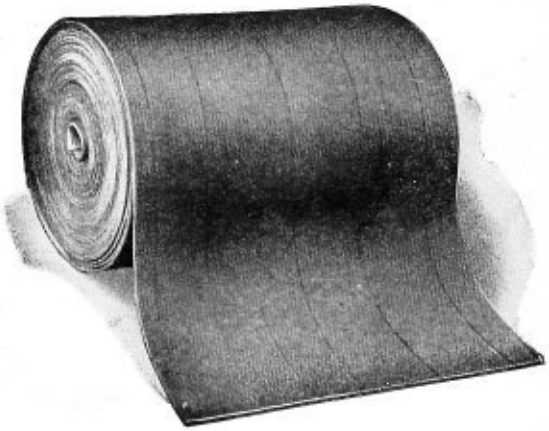
Perfection List, less discount	$	.....
W. B. List, " "		.....
Eureka List, " "		.....
Moulded List, " "		.....

HAIR FELT

In Rolls 50 Feet Long and 6 Feet Wide

½ inch thick	per square foot,	$0.04¾
¾ " "	" "	.05¾
1 " "	" "	.06½
1½ inch thick	per square foot	$0.10
2 " "	" "	.13

PEERLESS RUBBER MATTING

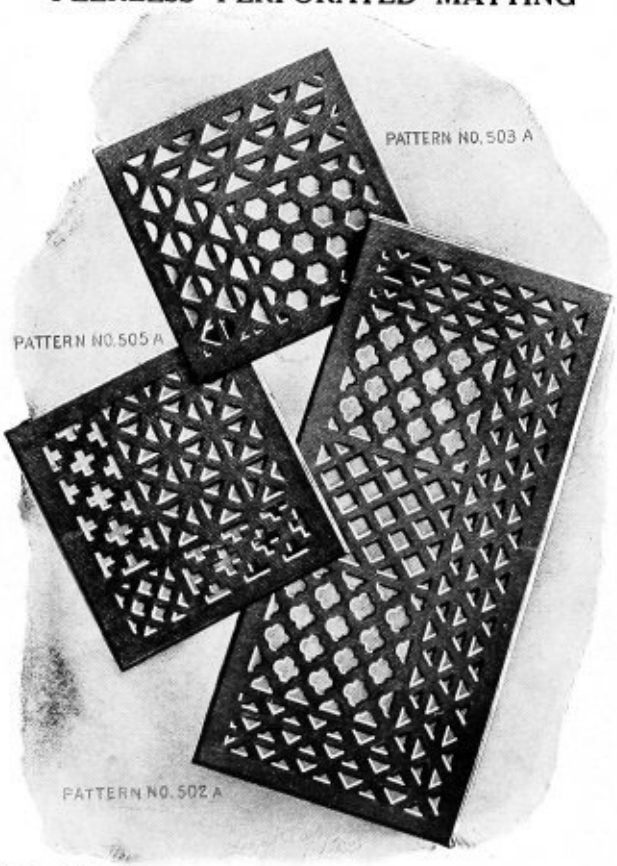


3/32	inch,	30	inches	wide,	1	yard long	weighs 6	lbs.
1/8	"	35	"		1	"	" 7	"
3/32	"	36	"		1	"	" 7¼	"
1/8	"	40	"		1	"	" 8	"
1/8	"	30	"		1	"	" 7½	"
1/8	"	35	"		1	"	" 8¾	"
1/8	"	36	"		1	"	" 10	"
1/8	"	40	"		1	"	" 11	"

3/16	inch thick	weighs	14½	lbs.	per square yard	
1/4	"	"	19	"	"	
5/16	"	"	24	"	"	
3/8	"	"	28½	"	"	
7/16	"	"	33	"	"	
1/2	"	"	38	"	"	

Price, per lb., 40 cents.

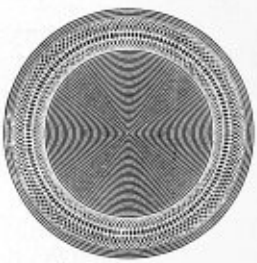
PEERLESS PERFORATED MATTING



1/4	inch thick, per square foot		$0.75
3/8	"	"	1.00
1/2	"	"	1.25
5/8	"	"	1.50

Made any width to six feet.
Extra for letters..... each, $0.25

CUSPIDORE, PITCHER, OR SLOP-JAR MATS



Pattern No. 1

Pattern No. 2

PATTERN No. 1

12	inches diameter	per dozen,	$5.00
15	"	"	6.00
18	"	"	7.00

PATTERN No. 2

5	inches diameter	per dozen,	$2.00
6	"	"	3.00
8	"	"	4.00
10	"	"	4.50

RUBBER BOOTS

Short, with Stand Loop

Men's dull finish, per pair	$4.28
Boys' " " " "	3.26
Men's Snag Proof " "	4.95
" leather sole " "	6.00
" " " hob nail, per pair	6.25

Hip, with Stand Loop

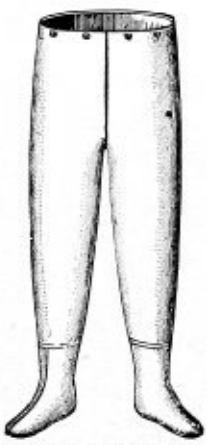
Men's, per pair	$6.22
" Snag Proof, per pair	7.00
" leather sole " "	7.60
" " " hob nail, per pair	7.80

Light Thigh

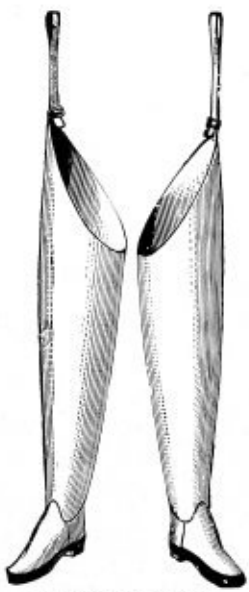
Men's, per pair	$6.22
Boys' " "	4.90

RUBBER WADING PANTS AND BOOTS

Wading Pants with Boots



Wading Pants with Stocking Feet



Wading Hip Boots

Wading pants with boots, dead grass color, weight 6 lbs. 5 oz., per pair	$14.00
" hip boots, dead grass color, weight 3 lbs. 14 oz., per pair	10.00
" pants with stocking feet, dead grass color, weight 4 lbs. 12 oz., per pair	10.00
" " " boots, dull finish, weight 7 lbs. 5 oz., per pair	12.50
" " " stocking feet, dull finish, weight 3 lbs. 5 oz., per pair	9.75

RUBBER GLOVES AND MITTENS

With Gauntlet

RUBBER GLOVES

Style	Per Dozen with Gauntlet	Per Dozen without Gauntlet
Ladies' fine, tan or black	$16.50	$13.00
Men's " " " "	18.00	15.00
" heavy, black	30.00	24.00
" acid, white 5-inch gauntlet	36.00	.....
" " " 9 " "	39.00	.....

Without Gauntlet

RUBBER MITTENS

Men's heavy, unlined, per dozen $19.50
Men's heavy wool lined, per dozen $22.50

RUBBER CLOTHING

REX OFFICERS' COAT

SUFFOLK

IMPROVED FIREMEN'S COAT

Size .....No.	2	3	4	5	6	7	8	9
Breast Measure .....inches	36	38	40	42	44	46	48	50

Rex Officers' Coat ..... each, $3.00

Improved Firemen's Coat, Sewed Seams with Snaps and Rings ..... " 4.00

Koki, Dull, on Sheeting, 56 in. long, with Buckles ..... " 3.50

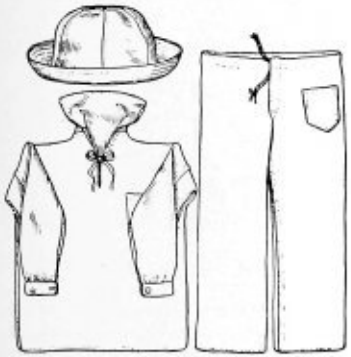
No. 193, Black Velvet Collar ..... " 3.00

Zephyr, Black Velvet Collar, Extra Light Weight ..... " 3.75

Suffolk, Tan or Striped ..... " 5.00

Mackintoshes from $6.00 to $15.00

WHITE YACHT CLOTHING AND SHOES



Hat ..... each, $0.60
Pants ..... " 1.00
Jumper ..... " 1.25

White Duck with Black Soles ..... per pair, $0.75
" " " White " ..... " 1.25

COVER'S AUTOMATIC RUBBER RESPIRATOR

Has a perfect Filter Device, large capacity, and will keep out Dust, Smoke, Fumes and Gases. It is made of Soft White Rubber and is easily kept clean.
Each $2.00

COVER'S GAS TIGHT RUBBER GOGGLES

Are made of a single piece of Pure Gum Rubber; fit anybody Air Tight, and are worn with the Respirator when desired. Each $1.50

Hame Cover

RUBBER HORSE COVERS

Style	Goods	Price Each
Hame	Sheeting	$3.55
"	Drill	4.20
Long Cover with Hood, in one piece	Sheeting	4.85
	Drill	5.50
Hoods only	Sheeting	1.65
" "	Drill	1.85

RUBBER BUGGY APRONS

Sheeting ..... each, $2.10
Drill ..... " 2.40

Give width of Dash Board

RUBBER APRONS

For Buggy Washers

Light weight ..... each, $1.25
Heavy " ..... " 1.50

RUBBER GROUND BLANKETS

Lustre Sheeting, 45 x 72 inches ..... each, $1.25

For Canvas Lined and Duck Horse covers, see page 291.

OILED CLOTHING

SAWYER'S

SAWYER'S CRACK-PROOF TRADE MARK EXCELSIOR

Excelsior Crack-Proof Oiled Clothing is made under our special waterproofing process that render them the most flexible, as well as serviceable, garments in the market.

SAWYER'S TRADE MARK EXCELSIOR

Garments bearing the Excelsior Trade Mark are guaranteed to be the best in the world. They are made for quality and are sold on their merits by all leading dealers.

LIGHTHOUSE BRAND

Lighthouse Brand Goods are equal in quality to any goods on the market (except our Excelsior Brand) and we solicit a comparison with the so-called "best quality" of other manufacturers.

SIZES OF CLOTHING

Oiled Clothing is usually worn in cold, stormy weather, over heavy undergarments, and consequently the actual breast measurements of our garments are much larger than indicated by sizes over which they are intended to fit.

POMMEL SLICKERS

Size	Actual Breast Measure, inches	Sleeve from Center of Back, inches	Length inches
0 or 42	60	35	62
1 " 40	58	34	60
2 " 38	56	33	58
3 " 36	54	32	56

MEN'S LONG COATS AND SLICKERS

0 or 42	58	33½	58
1 " 40	56	32½	56
2 " 38	54	31½	54
3 " 36	52	30½	52

THREE-QUARTER OR MEDIUM COATS

Size	Breast, inches	Length, inches
0	42	43
1	40	43
2	38	43
3	36	43

FROCKS OR HALF COATS

0	42	39
1	40	39
2	38	39
3	36	39

JACKETS

Size	Breast, inches	Length, inches
0	42	31
1	40	30½
2	38	30
3	36	29½

APRON PANTS

Size	Waist, inches	Leg, inches
0	46	31
1	44	30
2	42	29
3	40	28

STRING PANTS

Size	Waist, inches	Leg, inches
0	44	30
1	42	29
2	40	28
3	39	27

APRON BARVEL

Width 36 in. Length 48 in.

BUTCHER'S APRON

Width 40 in. Length 50 in.

STORM HATS

Nos. 1 to 6.....6¾ to 7½ in.

CAPE ANN HAT

Nos. 1 to 6.....6¾ to 7½ in.

GOSSAMER HAT

Nos. 1 to 4.....6¾ to 7½ in.

YACHT AND BOSTON HAT

Nos. 1 to 6.....6¾ to 7½ in.

SUN HAT

Nos. 1 to 4.....6¾ to 7½ in.

MINER'S HAT

Nos. 1 to 6.....6¾ to 7½ in.

SQUAM HAT

Nos. 1 to 6.....6¾ to 7½ in.

OILED CLOTHING

EXCELSIOR AND LIGHT HOUSE BRANDS—All Double Clothing

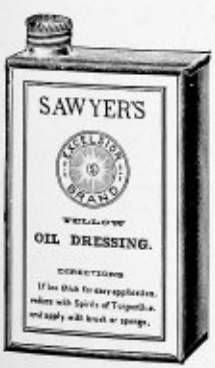
Net Trade List

	Excelsior Tan Yacht	Excelsior Brown Crack Proof	Excelsior		Lighthouse	
			Yellow	Black	Yellow	Black
Pommel Slickers.....per doz.	.....	.....	$35.00	$36.25	.....	.....
Drivers, or Motormen's Coats.... "	.....	$34.00	.....	34.00	.....	.....
Slickers..... "	$34.00	31.25	30.00	31.25	$25.00	$26.25
Three-quarter or Medium Coats.. "	.....	25.25	24.00	25.25	21.00	22.25
Half Coats or Frocks..... "	.....	22.25	21.00	22.25	18.00	19.00
Jackets..... "	17.00	15.00	14.50	15.00	12.50	13.00
Ladies' Ulsters..... "	40.00	.....	.....	.....	.....	.....
Apron Pants..... "	17.00	15.00	14.50	15.00	12.50	13.00
String Pants..... "	17.00	14.50	14.00	14.50	12.00	12.50

HATS AND SOU'WESTERS

Storm Hat (patented), black	per doz.,	$8.50
Cape Ann Hat, black	"	5.50
Sun Hat, soft, yellow or black	"	7.50
Yacht Hat, black, round top, with ear piece	"	5.50
Boston Hat, black, round top, without ear piece	"	5.00
Gossamer Hat, black or yellow, square top	"	5.00
Squam Hat, black or yellow	"	3.25
Miner's Hat, " " " light leathered	"	3.75
Squam " " " " " "	"	3.75
Squam-Miner Hat, black or yellow, heavy leathered	"	4.00

APRONS



Duck Aprons, lined, yellow or black, 40x50 inches	per doz.,	$10.00
Drill " " " " " 40x50 "	"	9.00
" " " " " " 36x48 "	"	6.00
Double Barvels " " " " 36x48 "	"	8.00

EXCELSIOR OIL DRESSING

Yellow or Black

Pint Cans	per doz.,	$3.50

OILED CLOTHING

Pommel Slicker as a Riding Coat

EXCELSIOR BRAND POMMEL SLICKERS

Yellow and Black

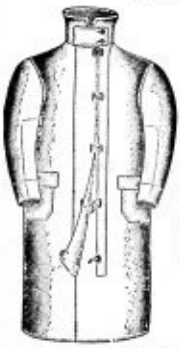
Pommel Slickers are so designed as to completely protect the saddle as well as the rider. They are cut very full from the waist to bottom of skirt, thus affording better protection than any other coat.

When used as a Walking Coat the fullness is buttoned over similar to a double-breasted coat. Made in Excelsior brand only.

Pommel Slicker As a Walking Coat

DRIVERS' AND MOTORMEN'S COATS

Excelsior Brand—In Black and Brown



The Motorman's Coat, originally designed for drivers' and motormen's use, has become the acknowledged favorite with all who are subjected to extreme exposure and require an up-to-date waterproof coat.

It is made double throughout, in black and "Crack-Proof" brown, with wide collar and throat-piece, reinforced sleeves, elastic inner-sleeves and long storm lap, furnished with brass coat-clasps, or buckles, attached by means of brass rivets.

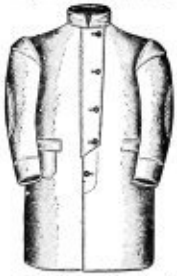
SLICKERS

All Brands
Tan, Brown, Yellow and Black

Is made double throughout in black, yellow and "Crack-Proof" brown, with flannel collar and throat-piece, epaulets, patches on sleeves, elastic inner sleeves, storm lap, two outside pockets and furnished with brass buttons.

THREE-QUARTER COATS

All Brands
Brown, Yellow and Black



Three-quarter Coat, is made double throughout in black, yellow or "Crack-Proof" brown, with epaulets, patch on sleeve, elastic inside sleeve, and furnished with brass buttons. Being from 12 to 15 inches shorter than a long coat, it affords complete protection when worn with long rubber boots.

HALF COATS OR FROCKS

All Brands
Brown, Yellow and Black

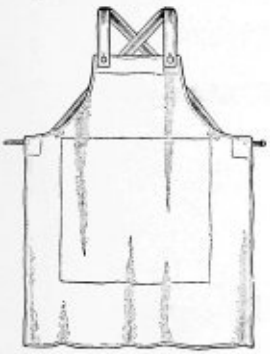
Same garment as Three-quarter Coat, only difference being in length, the Half Coats being about 4 inches shorter than the Medium Coats.

JACKETS

All Brands
Tan, Brown, Yellow and Black

This garment is used in connection with pants, where a longer coat would be cumbersome.

OILED CLOTHING



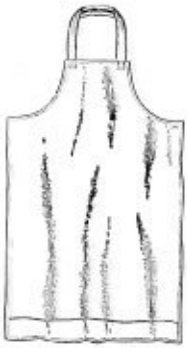
EXCELSIOR BRAND DUCK APRON

FOR BUTCHERS OR TANNERS

Black and Yellow

This Apron is reinforced in the center, fitted with suspenders, buckle and leather strap at back.

Width, 40 inches; length, 50 inches.



EXCELSIOR BRAND BARVEL

FOR FISHERMEN AND TANNERS

Black and Yellow

The Apron Barvel is made double throughout, with band to go over head and eyelets at side. Used by fishermen, canners, packers, tanners and those engaged in similar work.

Width, 36 inches; length, 50 inches.

OVERALL APRON PANTS

ALL BRANDS

Tan, Brown, Black, and Yellow

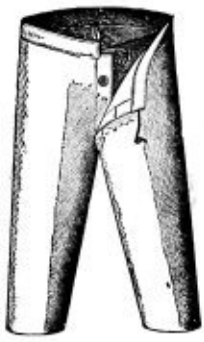
It is whole waisted and consequently cut very large, as the measurements indicate.

STRING PANTS

ALL BRANDS

Tan, Black, and Yellow

A very convenient style for use with Jackets.



Cape Ann

Sawyer's Storm

Sun (Soft)

Squam

Miners'

Yacht

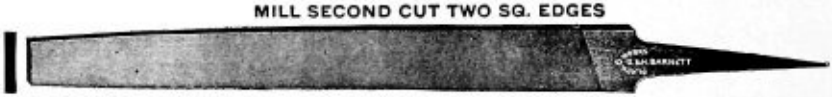
Gossamer

FILES

MILL BASTARD TWO SQ. EDGES

Size, inches	4	5	6	7	8	9	10	12	14	15	16
Per doz	$3.00	3.20	3.50	3.90	4.30	4.90	5.60	7.50	10.70	13.10	14.70

MILL SECOND CUT TWO SQ. EDGES

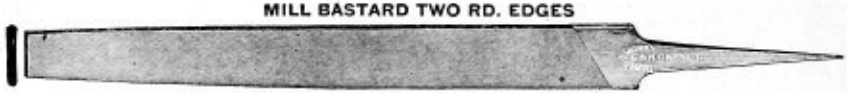


Size, inches	4	5	6	7	8	9	10	12	14	15	16
Per doz	$3.50	3.80	4.00	4.60	4.90	5.80	6.40	8.60	12.20	15.00	16.80

MILL BASTARD ONE RD. EDGE

Size, inches	4	5	6	7	8	9	10
Per doz	$3.40	3.60	3.90	4.40	4.80	5.50	6.30

MILL BASTARD TWO RD. EDGES



Size, inches	4	5	6	7	8	9	10	12	14	15	16
Per doz	$3.80	4.00	4.40	4.90	5.40	6.10	7.00	9.40	13.40	16.40	18.40

FLAT BASTARD

Size, inches	4	5	6	7	8	9	10	12	14	15	16
Per doz	$3.70	3.90	4.30	4.80	5.30	6.30	7.00	9.70	13.30	16.00	17.80

FLAT SECOND CUT

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$4.30	4.60	4.80	5.50	6.10	8.10	11.00	15.30	18.30	20.10

FLAT SMOOTH

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$4.70	4.90	5.30	6.10	6.60	8.70	12.10	16.70	20.00	22.30

FILES

ROUND GULLETING

Size, inches	4	5	6	7	8	9	10	11	12
Per doz	$4.80	5.40	6.10	7.00	7.50	8.50	9.10	10.70	11.80

SINGLE STAVE SAW

Size, 8 inches ..... per doz. $9.40

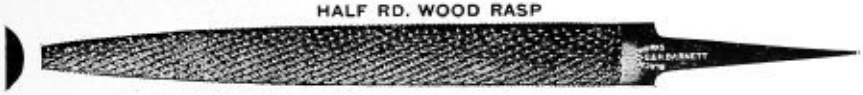
PLANER KNIFE

Size, inches	8	10	12
Per doz	$6.40	8.60	12.10

FLAT WOOD RASP

Size, inches	6	8	10	12	14	16
Per doz	$7.40	9.40	12.80	17.50	23.20	30.80

HALF RD. WOOD RASP



Size, inches	8	10	12	14	16
Per doz	$10.10	13.70	18.70	24.80	32.90

HALF RD. CABINET RASP

Size, inches	8	10	12	14	16
Per doz	$12.80	17.50	22.80	29.60	36.90

HORSE RASP ½-FILE

Size, inches	12	13	14	15	16
Per doz	$14.40	17.00	20.10	23.60	27.50

HORSE RASP ¼-FILE

Size, inches	12	13	14	15	16
Per doz	$12.80	15.20	17.80	20.90	24.40

COLTON FILE CARD

Steel Back and Frame

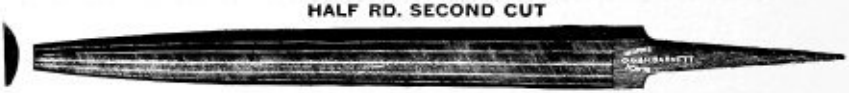
Per doz $2.50

FILES

HALF ROUND BASTARD

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$4.80	5.40	6.10	7.00	7.50	9.10	11.80	15.50	18.50	20.60

HALF RD. SECOND CUT



Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$5.00	6.10	6.70	7.70	8.30	10.10	13.00	17.00	20.40	22.50

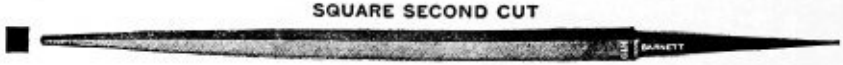
HALF ROUND SMOOTH

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$6.10	6.40	7.10	8.20	8.90	10.70	13.90	18.30	21.70	24.20

SQUARE BASTARD

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$3.80	4.10	4.60	5.10	5.50	7.40	10.20	13.90	16.90	18.70

SQUARE SECOND CUT



Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$4.60	4.80	5.10	5.80	6.30	8.50	11.50	16.10	19.20	21.20

TAPER SAW

Size, inches	3	3½	4	4½	5	5½	6	7	8	9	10	12
Per doz	$2.10	2.10	2.20	2.40	2.60	3.00	3.40	4.30	5.40	6.60	8.10	12.50

SLIM TAPER SAW

Size, inches	3	3½	4	4½	5	5½	6	7	8	9	10	12
Per doz	$2.10	2.10	2.20	2.30	2.50	2.90	3.10	3.80	4.50	5.40	6.40	9.50

DBLE. ENDED TAPER WITH HANDLE

Size, inches	7	8	9	10
Per doz	$3.50	3.90	4.40	4.90

FILES

HAND BASTARD

Sizes, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$3.70	3.90	4.30	4.90	5.40	7.50	10.70	15.00	17.90	20.10

HAND SECOND CUT

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$4.30	4.70	5.10	5.80	6.30	8.70	12.30	17.00	20.60	22.80

HAND SMOOTH

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$4.80	5.30	5.60	6.30	6.70	9.40	13.50	18.20	21.70	24.20

ROUND BASTARD

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$3.00	3.20	3.50	3.90	4.30	5.60	7.50	10.70	13.10	14.70

ROUND SECOND CUT

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$3.50	3.80	4.00	4.60	4.90	6.40	8.60	12.20	15.00	16.80

ROUND SMOOTH

Size, inches	4	5	6	7	8	10	12	14	15	16
Per doz	$3.90	4.10	4.50	4.90	5.40	7.00	9.40	13.10	16.10	17.90

BAND SAW

Size, inches	3	3½	4	4½	5	5½	6	7	8	9	10
Per doz	$2.50	2.50	2.90	3.10	3.50	4.00	4.70	5.60	6.70	8.10	9.70

FILES AND RASPS

Manufacturers' Standard List, Adopted November 1, 1899

LIST PER DOZEN

Mill and Round				Flat			Square				Hand and Pillar		
Inch	Bastard	2d Cut	Smooth	Bastard	2d Cut	Smooth	Inch	Bastard	2d Cut	Smooth	Bastard	2d Cut	Smooth
4	$3.00	$3.50	$3.90	$3.70	$4.30	$4.70	4	$3.80	$4.60	$4.90	$3.70	$4.30	$4.80
5	3.20	3.80	4.10	3.90	4.60	4.90	5	4.10	4.80	5.30	3.90	4.70	5.30
6	3.50	4.00	4.50	4.30	4.80	5.30	6	4.60	5.10	5.50	4.30	5.10	5.60
7	3.90	4.60	4.90	4.80	5.50	6.10	7	5.10	5.80	6.30	4.90	5.80	6.30
8	4.30	4.90	5.40	5.30	6.10	6.60	8	5.50	6.30	7.00	5.40	6.30	6.70
9	4.90	5.80	6.30	6.30	7.20	7.90	9	6.60	7.70	8.30	6.70	7.80	8.30
10	5.60	6.40	7.00	7.00	8.10	8.70	10	7.40	8.50	9.10	7.50	8.70	9.40
11	6.70	7.80	8.50	8.60	9.80	10.70	11	9.10	10.40	11.30	9.40	10.90	11.80
12	7.50	8.60	9.40	9.70	11.00	12.10	12	10.20	11.50	12.80	10.70	12.30	13.50
13	9.40	10.70	11.70	11.80	13.60	14.70	13	12.50	14.30	15.40	13.30	15.20	16.20
14	10.70	12.20	13.10	13.30	15.30	16.70	14	13.90	16.10	17.50	15.00	17.00	18.20
15	13.10	15.00	16.10	16.00	18.30	20.00	15	16.90	19.20	20.90	17.90	20.60	21.70
16	14.70	16.80	17.90	17.80	20.10	22.30	16	18.70	21.20	23.30	20.10	22.80	24.20
17	18.20	20.20	21.70	21.50	24.20	26.50	17	22.50	25.40	27.50	24.20	27.10	28.60
18	20.20	22.70	24.30	23.90	26.80	29.20	18	25.10	28.20	30.40	26.80	29.90	31.50
19	24.60	27.50	29.40	28.40	31.60	34.60	19	29.70	33.20	35.70	31.90	35.40	37.60
20	27.40	30.70	32.90	31.50	35.30	38.30	20	32.80	36.70	39.30	35.10	39.20	41.60
Mill Blunt, Double Cut adv. 2 in. Mill, Double Cut.....adv. 1 in. Mill, Narrow Point...adv. 1 in.				Cant (Blunt) Dbl. Cut advance 2 in. Course Cut advance 1 in.			Square Blunt....advance 1 in. 1 Safe Edge.....advance 1 in. 2 Safe Edges....advance 2 in.				Slotting (Bit.), adv. 2 in. Cotter Blunt or Taper advance 2 in.		

Half Round and Three Square				Mill One Round Edge				Mill Two Round Edges		
Inch	Bastard	2d Cut	Smooth	Inch	Bastard	2d Cut	Smooth	Bastard	2d Cut	Smooth
4	$4.80	$5.60	$6.10	4	$3.40	$3.90	$4.40	$3.80	$4.40	$4.90
5	5.40	6.10	6.40	5	3.60	4.30	4.60	4.00	4.80	5.10
6	6.10	6.70	7.10	6	3.90	4.50	5.10	4.40	5.00	5.60
7	7.00	7.70	8.20	7	4.40	5.20	5.50	4.90	5.80	6.10
8	7.50	8.30	8.90	8	4.80	5.50	6.10	5.40	6.10	6.80
9	8.50	9.40	9.90	9	5.50	6.50	7.10	6.10	7.30	7.90
10	9.10	10.10	10.70	10	6.30	7.20	7.90	7.00	8.00	8.80
11	10.70	11.80	12.70	11	7.50	8.80	9.60	8.40	9.80	10.60
12	11.80	13.00	13.90	12	8.40	9.70	10.60	9.40	10.80	11.80
13	14.10	15.40	16.60	13	10.60	12.00	13.20	11.80	13.40	14.60
14	15.50	17.00	18.30	14	12.00	13.70	14.70	13.40	15.30	16.40
15	18.50	20.40	21.70	15	14.70	16.90	18.10	16.40	18.80	20.10
16	20.60	22.50	24.20	16	16.50	18.90	20.10	18.40	21.00	22.40
17	24.70	27.00	28.90	17	20.50	22.70	24.40	22.80	25.30	27.10
18	27.50	29.90	32.00	18	22.70	25.50	27.30	25.30	28.40	30.40
19	32.80	35.70	38.10							
20	36.20	39.40	42.30							

Ginsaw.....take Bastard price.
Crossing.....adv. 2 in.
Tumbler.....adv. 2 in.
Feather Edge (Blunt).....adv. 2 in.
High Back, Half Round.....adv. 2 in.

Sizes below 4 inches, not extended, take 4 inch price.
Half inches not specified, takes next higher full inch price.
Dead Smooth, double the price of Bastard Cut.
One Round Edge, advance 12½ per cent.
All lengths above those listed, advance 20 per cent on next lower inch price.
Blunt Files not specified, advance one inch on respective kinds and cuts.
Single or Float Cut not specified, on regular shapes take Double Cut prices.
Equallings (Bellied), advance two inches on respective kinds and cuts.
Two Round Edges, advance 25 per cent.
Files varying from standard sizes, subject to special prices.
Cuts not specified, made upon regular blanks, advance one inch on respective kinds and nearest cut.

FILES AND RASPS

Manufacturers Standard List. Adopted November 1, 1899

LIST PER DOZEN

Tapers			Slim Tapers		Bandsaw Blunt & Taper	
Inch	Single Cut	Double Cut	Single Cut	Double Cut	Regular	Slim
3	$2.10	$2.50	$2.10	$2.50	$2.50	$2.50
3½	2.10	2.50	2.10	2.50	2.50	2.50
4	2.20	2.90	2.20	2.60	2.90	2.60
4½	2.40	3.10	2.30	3.00	3.10	3.00
5	2.60	3.50	2.50	3.20	3.50	3.20
5½	3.00	4.00	2.90	3.50	4.00	3.50
6	3.40	4.70	3.10	3.90	4.70	3.90
7	4.30	5.60	3.80	4.50	5.60	4.50
8	5.40	6.70	4.50	5.30	6.70	5.30
9	6.60	8.10	5.40	6.30	8.10	6.30
10	8.10	9.70	6.40	7.50	9.70	7.50
11	10.70	12.10	8.30	9.10	12.10	9.10
12	12.50	14.70	9.50	11.00	14.70	11.00
13	15.90	17.50	12.10	13.10	17.50	13.10
14	18.20	20.60	13.80	15.40	20.60	15.40

Horse Rasps			
Inch	Plain	Beveled & ¾ Rasp	Tanged
10	$9.40	$10.70	$12.80
11	11.40	12.90	15.20
12	12.80	14.40	16.80
13	15.20	17.00	19.60
14	17.80	20.10	23.10
15	20.90	23.60	27.30
16	24.40	27.50	32.20
17	28.90	31.50	.....
18	32.90	36.20	.....

Double End Taper with Handle	
6-inch	$3.50
7-inch	3.50
8-inch	3.90
9-inch	4.40
10-inch	4.90

Wood Files			
Inch	Flat	Half Round	Cabinet
6	$4.30	$6.10	$8.10
7	4.80	7.00	9.30
8	5.30	7.50	10.10
9	6.30	8.50	12.20
10	7.00	9.10	13.70
11	8.60	10.70	16.80
12	9.70	11.80	18.70
13	11.80	14.10	22.40
14	13.30	15.50	24.80
15	16.00	18.50	29.70
16	17.80	20.60	32.90
17	21.50	24.70	38.90
18	23.90	27.50	43.60

Wood Rasps			
Inch	Flat	Half Round	Cabinet
6	$7.40	$8.10	$10.10
7	8.60	9.30	11.70
8	9.40	10.10	12.80
9	11.40	12.20	15.50
10	12.80	13.70	17.50
11	15.50	16.80	20.70
12	17.50	18.70	22.80
13	20.90	22.40	26.80
14	23.20	24.80	29.60
15	27.80	29.70	33.90
16	30.80	32.90	36.90
17	36.20	38.90	42.40
18	40.90	43.60	46.90

Knife			
Inch	Bastard	2d Cut	Smooth
4	$5.40	$6.10	$6.40
5	6.10	6.70	7.10
6	6.90	7.50	7.90
7	7.80	8.50	8.90
8	8.50	9.10	9.50
9	9.40	10.60	11.30
10	10.10	11.50	12.30
11	12.20	13.70	14.60
12	13.70	15.20	16.10
13	16.30	17.90	19.20
14	18.20	19.90	21.20

Warding		
Bastard	2d Cut	Smooth
$4.00	$4.80	$5.40
4.50	5.30	5.80
4.90	5.90	6.40
5.90	6.90	7.50
6.40	7.50	8.20
7.80	9.00	9.90
8.70	10.10	11.00
10.90	12.70	13.70
12.30	14.30	15.40
15.20	17.40	18.70
17.00	19.40	21.00

Inch	Pit Saw Single Cut	Cant Saw Single Cut	Cross Cut Single Cut	Hook Tooth Single Cut
4	$4.80	$4.30	$4.80	. . .
5	5.40	4.70	5.40	. . .
6	6.10	5.40	6.10	6.70
7	7.00	6.10	7.00	7.70
8	7.50	6.40	7.50	8.30
9	8.50	7.80	8.50	9.40
10	9.10	8.70	9.10	10.10
11	10.70	10.40	10.70	11.80
12	11.80	11.40	11.80	13.00

Climax, adv. 2 in. on Half Round Bastard.
Round Gulleting, take Pit Saw price

Sizes below 4 inches, not extended, take 4 inch price.
Half inches not specified, takes next higher full inch price.
Dead smooth, double the price of Bastard Cut.
One Round Edge, advance 12½ per cent.
All Lengths above those listed, advance 20 per cent on next lower inch price.
Blunt Files not specified, advance one inch on respective kinds and cuts.
Single or Float Cut not specified, on regular shapes take Double Cut prices.
Equalings (Bellied), advance two inches on respective kinds and cuts.
Two Round Edges, advance 25 per cent.
Files varying from standard sizes, subject to special prices.
Cuts not specified, made upon regular blanks, advance one inch on respective kinds and nearest cut.

SAWS

SOLID TOOTH CIRCULAR SAWS.

Diameter Inches	Thickness Gauge	Size Hole Inches	Price Each	Extra for Each Gauge Heavier	Beveling New Saws Per Gauge
1	24	3/8	$1.00	$0.01	$0.06
1½	24	3/8	1.00	.01	.07
2	23	3/8	1.00	.01½	.08
2½	22	3/8	1.00	.02	.09
3	21	1/2	1.00	.02½	.10
3½	20	1/2	1.00	.03	.12
4	19	3/4	1.20	.03	.14
5	19	3/4	1.50	.04	.16
6	18	3/4	1.80	.05	.18
7	18	3/4	2.10	.06	.20
8	18	7/8	2.40	.08	.22
9	17	7/8	2.80	.10	.25
10	16	1	3.30	.12	.28
11	16	1	3.90	.16	.30
12	15	1	4.40	.20	.35
14	14	1 1/8	5.30	.25	.40
16	14	1 1/8	6.50	.30	.50
18	13	1 1/4	8.00	.40	.60
20	13	1 5/16	9.50	.50	.70
22	12	1 5/16	11.50	.60	.80
24	11	1 3/8	13.50	.70	.90
26	11	1 3/8	16.00	.85	1.05
28	10	1 1/2	18.50	1.00	1.20
30	10	1 1/2	21.00	1.15	1.30
32	10	1 5/8	24.00	1.30	1.40
34	9	1 5/8	27.00	1.50	1.55
36	9	1 5/8	31.00	1.80	1.70
38	9	1 5/8	35.00	2.00	1.85
40	9	2	41.00	2.30	2.00
42	8	2	47.00	2.60	2.20
44	8	2	55.00	3.00	2.40
46	8	2	65.00	3.50	2.60
48	8	2	75.00	4.00	2.80
50	7	2	85.00	4.50	3.00
52	7	2	95.00	5.00	3.25
54	7	2	105.00	6.00	3.50
56	7	2	120.00	7.00	3.75
58	7	2	135.00	8.00	4.05
60	6	2	150.00	9.00	4.35
62	6	2	170.00	10.00	4.65
64	6	2	190.00	12.00	5.00
66	6	2	210.00	15.00	5.35
68	5	2	235.00	18.00	5.75
70	5	2	265.00	21.00	6.15
72	5	2	300.00	24.00	6.55

Left-Hand Saw

Right-Hand Saw

SHINGLE AND HEADING

Size, inches	Each	Size, inches	Each
30	$32.00	44	$72.00
32	35.00	46	85.00
34	38.00	48	100.00
36	42.00	50	115.00
38	47.00	52	135.00
40	53.00	54	155.00
42	65.00	56	175.00

No warranty on Shingle Saws thinner than 16 gauge.

How to Order Shingle Saws

In ordering Shingle and Heading Saws, state the name of maker of machine, and diameter of saw required, and whether the saw is right or left hand; number of teeth preferred, thickness by gauge on rim If put on with screws, send one of each size to us, or mark off on paper exact size of screw, so we can drill and countersink saw to fit. We should prefer to have flange sent us; where this cannot be done, send paper impression, full size of flange, showing all holes for rivets, screws and mandrel.

Collars for Shingle, Heading, or Re-Saws

Cast Iron Flanges, 12 inches to 24 inches in diameter, $1.50 per inch. Steel Flanges, 3/8 thick at center or less, same price.

An additional charge is made for fitting Shingle Saw to old collar.

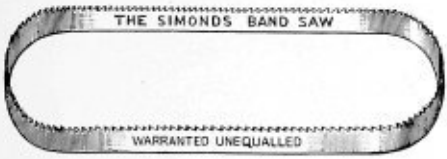
EDGER SAWS.

Diameter Inches	Gauge 8	Gauge 9	Gauge 10
12	$5.60	$5.40	$5.20
14	6.55	6.30	6.05
16	8.00	7.70	7.40
18	9.60	9.20	8.80
20	11.50	11.00	10.50
22	13.30	12.70	12.10
24	14.90	14.20	13.50

No extra charge for Saws one gauge thicker than list Circular saws beveled one guage without extra charge, up to and including 42 inches; 44 inches and larger, beveled two gauges without extra charge.

Circular Saws, 48 inches and larger, if made thinner than 10 gauge, add 10 per cent for each gauge thinner. These Saws are not warranted.

SAWS



WIDE BAND SAWS

JOINED AND FITTED

Width	Usual Gauge	Price per Foot
2 inches	18 to 20	$0.80
2½ "	18 " 20	1.00
3 "	18 " 20	1.20
3½ "	18 " 20	1.40
4 "	17 " 19	1.60
4½ "	17 " 19	1.80
5 "	17 " 19	2.00
5½ "	17 " 19	2.20
6 "	17 " 19	2.40
7 "	16 " 18	2.80
8 "	14 " 16	3.20
9 "	14 " 16	3.60
10 "	14 " 16	4.00
11 "	14 " 16	4.50
12 "	13 " 15	5.00
13 "	13 " 15	6.00
14 "	13 " 15	7.00

NARROW BAND SAWS

NOT BRAZED

Width, Inches	Usual Gauge	Number of Teeth to Inch	Price per Foot
⅛	22 or 23	6 or 7	$0.07
3/16	21 " 22	6	.08
¼	21 " 22	5 or 6	.09
⅜	21 " 22	4 or 5	.10
½	21 " 22	3½ or 4	.11
⅝	20 " 21	3-3½ or 4	.13
¾	20 " 21	2½ or 3	.15
⅞	20 " 21	2½ or 3	.17
1	20 " 21	½″or ⅝″pt. to pt.	.19
1⅛	19 " 20	½″or ⅝″pt. to pt.	.21
1¼	19 " 20	½″⅝″or ¾″pt. to pt.	.23
1⅜	19 " 20	½″⅝″or ¾″pt. to pt.	.26
1½	19 " 20	1″ or 1¼″ pt. to pt.	.29
1¾	19 " 20	1″ or 1¼″ pt. to pt.	.32

Setting and filing, 4 cents per foot less.
Same discount as on Narrow Band Saws

Net for brazing:

½ inch and less	$0.20
⅝ " to ⅞ inch	.25
1 " " 1¼ "	.30
1½ "	.40
1¾ " to 2 inch	.75

In ordering Band Saws, state length, width, gauge, space of teeth; also whether right or left hand.

GANG SAWS

Width Inches	8 Gauge	9 Gauge	10 Gauge	11 Gauge	12 Gauge	13 Gauge	14 Gauge	15 Gauge	16 Gauge
10	$2.50	$2.35	$2.10	$2.00	$1.90	$1.80	$1.70	$1.60	. . .
9	2.15	2.05	1.95	1.85	1.75	1.65	1.55	1.50	. . .
8	2.00	1.90	1.80	1.70	1.60	1.50	1.40	1.35	$1.30
7	. . .	. . .	. . .	. . .	. . .	1.40	1.30	1.25	1.20
6	. . .	. . .	. . .	. . .	. . .	1.25	1.20	1.15	1.10
5	. . .	. . .	. . .	. . .	. . .	1.15	1.10	1.05	1.00
4	. . .	. . .	. . .	. . .	. . .	1.10	1.05	1.00	.95

Gang Saws with reversed teeth, 10 per cent advance.

Tabbing: 4 hole tab 40 cents, 5 hole 50 cents, and 6 hole 60 cents.

Where we punch the holes in ends of saw for tabs, and do not furnish tabs, we charge one cent net per hole.

Gang Saw Rivets, 20 cents per pound

DRAG SAWS OF EQUAL WIDTH AND

LANCE TOOTH DRAG SAWS

8 Gauge	9 Gauge	10 Gauge
$4.80	$4.40	$4.00
4.00	3.60	3.30
3.30	3.00	2.70
3.00	2.70	2.40
2.70	2.40	2.20
2.40	2.20	2.00
2.20	2.00	1.80

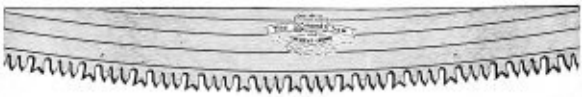
SAWS

CRESCENT GROUND CROSS-CUT SAWS

Different Styles of Cross-Cut Saw Teeth

No. 13. Champion.

No. 22. Lance.



No. 33. Dexter.

No. 66. Diamond.

No. 77. Common.

4	feet long	each,	$2.40
4½	" "	"	2.90
5	" "	"	3.50
5½	" "	"	4.10
6	" "	"	4.80
6½	" "	"	5.50
7	" "	"	6.30
7½	" "	"	7.10
8	" "	"	8.00

CROSS-CUT SAW HANDLE

A ⅜ inch wrought steel bolt passes through the entire length of the handle, giving it great strength. Malleable iron bell ferrule and heavy loop, which screws on to the bolt. Hardwood handle, oiled; ferrule, black japanned.

Per pair.....$0.35

ONE-MAN SAWS

With Supplementary Handle

Fine Champion Tooth

3	foot Saw, with handle	each,	$2.25
3½	" " " "	"	2.60
4	" " " "	"	3.00
4½	" " " "	"	3.35
5	" " " "	"	3.70
5½	" " " "	"	4.10

HAND SAWS

Simonds

No. 8 With Skew Back			No. 10 Plain		
16 inch.	per doz.,	$14.50	16 inch.	per doz.,	$13.00
18 "	"	16.00	18 "	"	14.00
20 "	"	17.50	20 "	"	16.00
22 "	"	19.50	22 "	"	18.00
24 "	"	21.00	24 "	"	19.00
26 "	"	22.00	26 "	"	20.00
28 "	"	25.00	28 "	"	23.50

BAY STATE No. 25 with Skew Back			KING PHILIP No. 42 With Skew Back		
19 inch.	per doz.,	$13.00	16 inch.	per doz.,	$9.00
18 "	"	14.00	18 "	"	10.00
20 "	"	15.00	20 "	"	11.25
22 "	"	16.00	22 "	"	12.50
24 "	"	17.00	24 "	"	14.00
26 "	"	20.00	26 "	"	15.00
28 "	"	22.00	28 "	"	16.75

COMPASS SAWS

Simonds No. 87

10 inch		per doz.,	$4.25
12 "		"	4.50
14 "		"	4.75
16 "		"	5.00
18 "		"	5.25

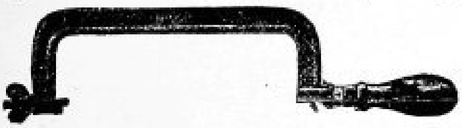
SAWS AND TOOLS

HACK SAWS

For Sawing Brass, Iron, Steel, Lead Pipe and Metals of all Kinds.

No. 10 Extension Hack Saw Frames

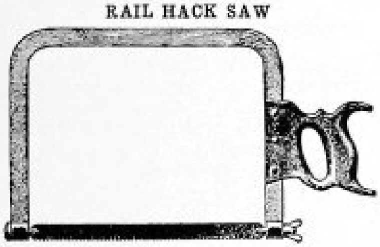
Adjustable from 8 to 12 inches inclusive, full polished and nickel plated. Price..............................per doz. $15.00



No. 30 Cast Iron Hack Saw Frames

Cast iron, handsomely enameled. Made for 8 inch or 9 inch blades.
No. 30. For 8 inch blades.................... ....per doz., $5.00
No. 30. " 9 " " .... " 6.00

RAIL HACK SAW



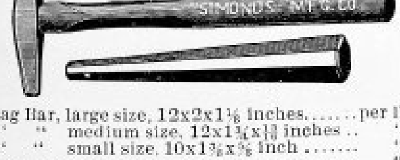
This saw is specially adapted for large work, cutting off large beams, etc., and will be found a very valuable tool for contractors, Nos. 4, 5 and 6 have handles each end.

No.	Length Under Back inches	Takes Blade, inches	Per dozen
1	7	9	$16.50
2	10	12	19.50
3	10	14	21.00
4	10	16	25.00
5	10	18	30.00
6	10	20	36.00

BLADES

Size....................inches	6	7	8	9	10	11	12
Regular Blades.....per gross	$7.00	7.50	8.00	9.00	10.00	11.00	12.00
Flexible " "	7.00	7.50	8.00	9.00	10.00	11.00	12.00
Size....................inches	9	12	14	16	18	20	
Rail Blades..........per doz.	$0.70	1.05	1.25	1.50	1.80	2.15	
Size....................inches	12x5/8	12x3/4	14x5/8	14x3/4	17x3/4	17x1	
Power Blades ......per gross	13.80	15.00	16.20	18.00	22.20	36.00	

Swage Bar and Hammer

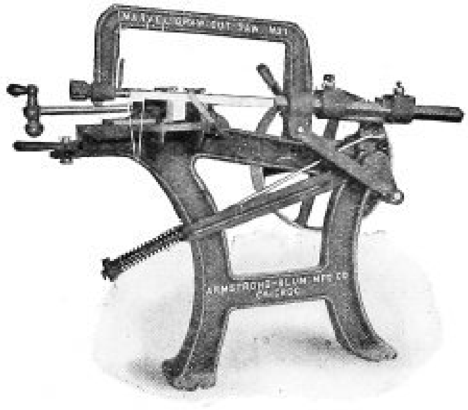


Steel Swag Bar, large size, 12x2x1⅛ inches.......per lb., $0.65
" " " medium size, 12x1¼x11/16 inches .. " .65
" " " small size, 10x1⅜x⅝ inch .... " .65
Hammer... .... " 1.00

SILVER SOLDER

Per oz...$1.00

MARVEL DRAW CUT POWER HACK SAW, No. 1



Saws fast and straight, Saves saw blades.

It has a draw cut. An eccentric on inner portion of crank, fitted to an arm that presses against the coiled steel spring, through which extends a steel rod, hooked firmly to rear portion of saw frame bearing, the tension pressing the saw down on material on the draw cut. On return or push motion the tension releases. The tension on spring is regulated by hand nut at end of spring.

A quick action vise that saves time.

A device that raises or lowers saw and holds it at any desired angle, allowing free use of both hands in measuring material.

Saws close to vise.

An extension to table so material rests on both sides of saw.

The wear can be taken up to any extent in the two saw bearings, which have also receptacles for oiled waste.

The drive shaft has bronze bearing.

Starter and knock-off are at front of machine.

Capacity—4x4 in. Length of blade, 12 inches

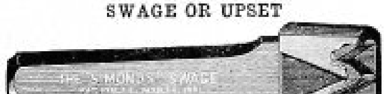
Revolutions—60 to 90 per minute.

Weight—110 pounds. Each, $16.75.

SAW GAUGE

Price each...$1.25

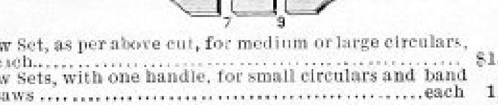
SWAGE OR UPSET



No. 1

No. 2

Simonds Swage, No. 1 .... each $2.75
" " No. 2 .... " 2.25
" " (special) for wide band saws....... " 2.25



Saw Set, as per above cut, for medium or large circulars, each.. $1.50
Saw Sets, with one handle, for small circulars and band saws ....each 1.00

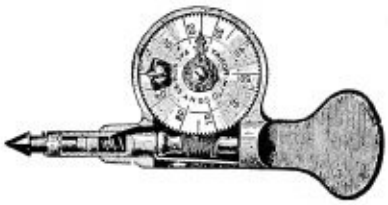
SAW TOOLS AND KNIVES

MORRILL'S PERFECT SAW SET

For Hand, Band, Scroll, Circular or Mill

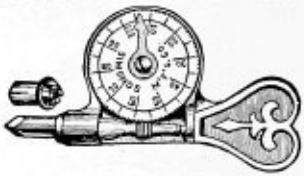
No. ½.	For Band Saws, from 22 to 16 G	$1.00
No. 1.	For Hand " " 32 to 16 G	1.00
No. 3.	For Single Tooth Cross-cut and small Circular Saws, 20 to 14 G	1.50
No. 4.	For Champion M Tooth Cross-cut 22 to 14 G	1.50
No. 5.	For Board and Timber Saws and all kinds of Re-saws, from 6 to 14 Gauge	2.00

THE TABOR SPEED INDICATOR



Each $1.00

STANDARD SPEED INDICATOR

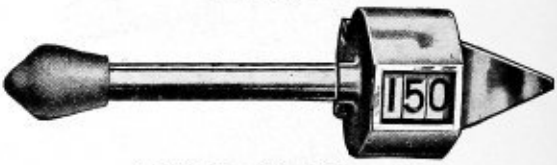


Each $1.00

V. P. SHAFT SPEED COUNTER

(Vest Pocket)

Accurate, Durable



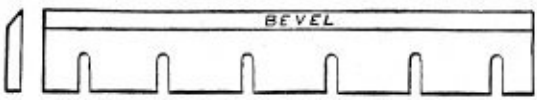
Positively will not Clog or Heat

Reads right or left. The arrow point, applied to center of arbor or shaft, removes all dirt and oil. Take initial reading, hold the counter by the arrow point and apply rubber tip to center of arbor or shaft, deduct initial reading from final result, which will give the number of revolutions.

Each $2.00

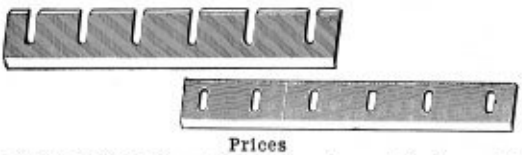
KNIVES

PLANING MACHINE KNIVES



24 Inches Long, 3¼ Inches Wide, ¾ Inch Thick

In ordering Planing Knives, etc., place the knife face down on a piece of blank paper, mark around to show the length of knife, and size and position of slots, and be sure to state the width and thickness as shown in diagram above, and number of knives in a set. Also where it is possible, give name of the maker of machine.



Prices

Knives 6¼ inches to 31 inches long, 4 inches wide or less, ⅜ in. thick or less, 18 cents per in. in length.

STAVE KNIFE

In sending in orders for Stave Knives, state length, width and thickness of knife; also the circle to which knife is to be concaved.

SHINGLE KNIFE

In ordering Shingle Knives, follow the same direction as for Planing Machine Knives.

MOULDING KNIVES

Orders for Moulding Knives must be accompanied by a piece of moulding, or exact patterns or drawings of knives required.

LISTING OR STAVE JOINTER KNIFE

Directions for ordering Planing Machine Knives apply also to Listing or Stave Jointer Knives.

SAND PAPER, EMERY PAPER AND EMERY CLOTH

FLINT PAPER

Per Ream — In Sheets 9 x 11 Inches

No. 000	No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3	No. 3½	No. 4	Ass'd
$6.25	$6.25	$6.25	$6.25	$6.75	$7.25	$7.75	$8.25	$9.50	$10.75	$11.75	$7.25

STAR SAND PAPER

Per Ream — In Sheets 8¾ x 10½ Inches

No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3	Ass'd
$4.25	$4.25	$4.25	$4.75	$4.75	$4.75	$5.25	$5.25	$4.75

EXTRA FLINT PAPER

In Rolls — Per Roll 50 Yards Long

Width	No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3	No. 3½	No. 4
24 inches	$6.75	$6.75	$6.75	$7.25	$7.75	$8.50	$9.25	$10.25	$11.25	$12.25
30 inches	9.00	9.00	9.00	9.50	10.00	10.50	11.00	12.00	14.00	16.50
36 inches	11.00	11.00	11.00	11.50	12.00	12.50	13.25	14.25	16.50	18.75
40 inches	13.25	13.25	13.25	13.75	14.25	14.75	15.50	16.75	19.00	22.00
42 inches	14.25	14.25	14.25	14.75	15.25	15.75	16.50	18.00	20.00	23.00
48 inches	16.50	16.50	16.50	18.00	18.50	19.25	20.00	22.00	25.50	29.00

SAND CLOTH

Per Roll 50 Yards Long

Width	No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3
14 inches	$12.00	$12.00	$12.00	$13.00	$13.75	$14.50	$15.50	$16.50
28 inches	24.00	24.00	24.00	26.00	27.50	29.00	31.00	33.00

EMERY PAPER

Per Ream — In Sheets 9 x 11 Inches

No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3	No. 3½	Ass'd
$9.25	$9.25	$9.25	$11.00	$11.50	$12.25	$14.00	$16.50	$19.25	$11.50

EMERY PAPER

Per Roll — 24 Inches Wide and 50 Yards Long

No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3	No. 3½
$10.00	$10.00	$10.00	$11.50	$12.00	$12.50	$14.25	$17.50	$20.00

EMERY CLOTH

Per Ream — In Sheets 9 x 11 Inches

Crocus	No. 000	No. 00	No. 0	No. 100	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3	No. 3½	Ass'd
$26.50	$26.50	$26.50	$26.50	$26.50	$26.50	$28.50	$29.75	$30.75	$33.00	$35.25	$37.50	$28.50

EMERY CLOTH

In Rolls — Per Roll 50 Yards Long

Width	No. 00	No. 0	No. 100	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3	No. 3½
9 inches	$9.25	$9.25	$9.25	$9.25	$10.50	$11.00	$11.50	$12.00	$13.25	$14.25
18 inches	18.50	18.50	18.50	18.50	21.00	22.00	23.00	24.00	26.50	28.50
27 inches	27.75	27.75	27.75	27.75	31.50	33.00	34.50	36.00	39.75	42.75

GARNET PAPER

In Sheets 9 x 11 Inches

No. 000	No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3
$6.50	$6.50	$6.50	$6.50	$7.00	$7.50	$8.00	$8.50	$9.75

Per Roll 50 Yards Long

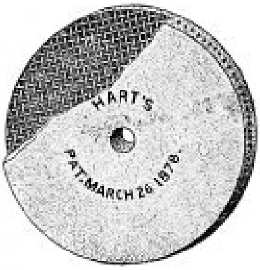
Width	No. 00	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3
24 inches	$7.50	$7.50	$7.50	$7.75	$8.00	$8.50	$9.25	$10.25
30 inches	9.75	9.75	9.75	10.25	10.75	11.25	12.00	13.00
36 inches	12.00	12.00	12.00	12.50	13.00	13.50	14.00	15.25
40 inches	14.00	14.00	14.00	14.50	15.25	15.75	16.25	17.25
42 inches	16.25	16.25	16.25	16.75	17.25	17.75	18.25	20.00
48 inches	20.00	20.00	20.00	21.00	21.50	22.00	23.75	27.00

GARNET CLOTH

Per Roll 50 Yards Long

Width	No. 0	No. ½	No. 1	No. 1½	No. 2	No. 2½	No. 3
14 inches	$14.00	$14.00	$15.00	$15.50	$16.00	$16.50	$17.00
28 inches	28.00	28.00	30.00	31.00	32.00	33.00	34.00

DETROIT EMERY WHEELS



When you order wheels, tell just what the work is you want them to do.

Give us the number of revolutions your wheel makes per minute.

Tell us whether your preference is for a hard, medium, or soft wheel.

If you are a new customer, be kind enough to tell what make of wheels has met your wants the best.

If your wheels fail to suit you, inform us in what particular they fail.

If you know, give the grade or number of emery you want your wheels made of.

Give the size and shape of wheels wanted; also size of mandrel hole.

Preserve the order number of your wheels. If they suited and you want more just like them, refer to the number when you order.

PRICE LIST

Diameter in inches	Thickness of Wheels in Inches														Number of Revolutions per Minute
	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	3 1/2	4	
1	$0.25	$0.30	$0.30	$0.35	$0.35	$0.40	$0.45	$0.50	$0.55	$0.60	$0.70	$0.80	$0.90	$1.00	15,000
2	.35	.45	.50	.55	.55	.60	.65	.70	.75	.80	.90	1.00	1.10	1.20	10,000
3	.50	.63	.75	.85	.95	1.10	1.25	1.35	1.45	1.60	1.85	2.10	2.60	3.00	7,400
4	.80	.95	1.10	1.23	1.35	1.60	1.90	2.20	2.50	2.75	3.25	3.85	4.60	5.00	5,450
5	1.00	1.20	1.40	1.60	1.80	2.10	2.60	3.00	3.45	3.80	4.65	5.40	6.40	7.40	4,400
6	1.40	1.58	1.75	2.13	2.50	3.05	3.70	4.30	5.00	5.60	6.90	8.25	9.50	11.00	3,600
7	1.85	2.08	2.30	2.73	3.15	3.95	5.00	5.60	6.40	7.25	8.90	10.55	11.10	12.60	3,150
8	2.12	2.36	2.60	3.10	3.60	4.50	5.70	6.40	7.60	8.30	10.20	12.05	14.00	16.00	2,750
9	2.50	2.83	3.15	3.50	3.85	4.90	6.80	8.05	9.25	10.50	12.95	15.40	19.00	21.75	2,450
10	3.00	3.35	3.70	4.40	5.10	6.60	8.10	9.50	11.00	12.40	15.35	18.15	21.00	23.80	2,200
12	3.50	3.75	4.00	5.00	6.00	7.40	9.00	10.70	12.75	14.05	17.40	20.75	24.25	27.50	1,850
14	....	....	6.20	7.45	8.70	10.70	13.25	15.20	17.80	19.50	24.20	26.75	28.70	30.70	1,600
16	....	....	....	....	11.00	13.70	16.90	19.40	22.00	25.00	30.80	36.50	43.00	48.75	1,400
18	....	....	....	....	13.75	17.00	21.75	24.50	28.75	32.00	39.50	47.00	54.50	62.00	1,250
20	....	....	....	....	....	20.00	25.00	29.00	34.00	38.00	47.00	56.00	66.00	75.00	1,100
22	....	....	....	....	....	....	29.87	35.50	41.12	46.75	58.00	69.25	80.50	91.75	1,000
24	....	....	....	....	....	....	....	43.00	50.00	57.00	71.00	85.00	99.00	113.00	925
26	....	....	....	....	....	....	....	....	59.00	67.00	83.00	99.00	115.00	130.00	775
30	....	....	....	....	....	....	....	....	....	87.50	109.00	131.00	153.00	175.00	735
36	....	....	....	....	....	....	....	....	....	127.00	157.00	188.00	219.00	250.00	550
42	....	....	....	....	....	....	....	....	....	160.00	196.00	232.00	268.00	304.00	400
48	....	....	....	....	....	....	....	....	....	....	229.00	272.00	317.00	361.00	350

IMPORTANT.— In ordering, always state the kind of work you wish to do, what shape face you want on the wheels, the size of mandrel hole, and the speed they are to run. Special wheels for running in water made to order.

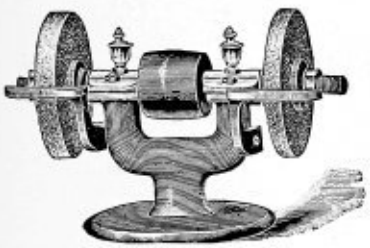
EMERY CYLINDERS AND CUP WHEELS

Diameter inches	Thickness of Rim							Revolutions per Minute
	1	1 1/2	2	2 1/2	3	3 1/2	4	
8	$15.50	......	......	......	......	......	......	1,425
9	16.50	$22.00	......	......	......	......	......	1,275
10	17.75	24.25	$29.50	......	......	......	......	1,150
12	18.75	26.25	33.00	$38.75	$44.00	......	......	950
14	22.50	31.00	38.50	45.50	51.50	$57.50	$61.50	825
16	26.00	35.75	44.60	53.00	60.25	67.60	73.00	725
18	28.80	40.25	51.40	61.40	71.00	79.00	86.90	625
20	30.90	44.00	56.25	67.40	78.50	87.60	97.00	575
22	35.00	49.75	65.00	79.40	91.50	103.90	115.50	525
24	37.50	54.25	70.50	86.25	99.50	113.60	126.60	475
26	39.75	59.80	......	93.00	109.25	124.75	139.25	375

Above list is figured on a basis of Cylinders 7 inches long. Other lengths at proportionate rates.

To obtain price of Cup Wheels, add to the price of Cylinder of same dimensions the price of a regular wheel whose diameter is the inside diameter of the Cylinder, the thickness whatever is required for the back of Cup Wheel.

DETROIT EMERY WHEEL GRINDERS



No. 0

No. 0. A machine for wheels 8 inches in diameter by 1 inch thickness or less.

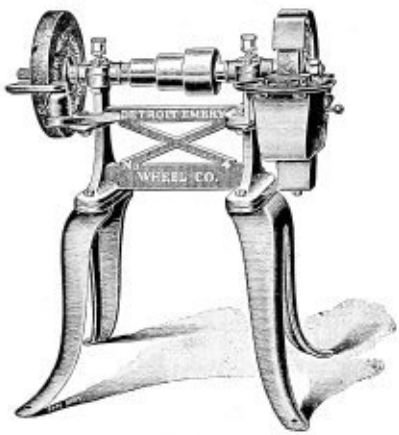
Length of mandrel	1 foot 2 inches
Diameter of mandrel	¾ inch
Length of bearings	2¼ inches
Diameter of bearings	⅝ inch
Distance between wheels	8¾ inches
Price, without counter-shaft	$9.00
Price, with counter-shaft	15.00

Price does not include Emery Wheels or Belting.

This is No. 4 with our new water tool wheel device connected to it, thus making it a very perfect water grinder.

Length of mandrel	3 feet
Diameter of mandrel	1¼ inches
Price, as shown in cut, without counter-shaft or wheel	$48.00
Price, with counter-shaft	63.00

Price does not include Emery Wheels or Belting.



No. 4

HUNTINGTON EMERY WHEEL DRESSER

For truing, shaping, sharpening and removing glaze from solid emery wheels running at full speed.

Patent Emery Wheel Dresser (2 sets of cutters)	$3.00
Extra Cutters, per set	.50

BLACK DIAMOND HAND TOOLS

Each $15.00, 18.00, 22.00, 24.00, 30.00

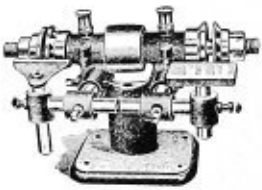
CANVAS BUFFING AND POLISHING WHEELS

Any Size to Order at Short Notice

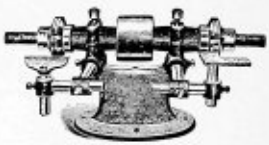
Old canvas ..... per lb. $.....
New " ..... " .....

CROWN GRINDERS

No. 1


No. 2

No. 3


No. 4

		No. 1	No. 2	No. 3	No. 4
Arbor to table	inches	5	6	8	9½
Diameter of base	"	5	5¼ x 6¼	9¼ x 6	13 x 9
Length of arbor	"	10	14	18	25
Diameter between collars	"	⅝	¾	1	1¼
Diameter of collars	"	2	2¼	3¼	4
Bearings	"	1⅝ x ¾	⅞ x 2	3 x 1 1/16	5 x 1 5/16
Pulley	"	2 x 1⅝	2¼ x 2	4 x 3	4¾ x 4
Distance between wheels	"	6⅛	7¾	10	....
Weight estimated	lbs.	10	22	42	85
Price	each	$5.00	$10.00	$15.00	$20.00

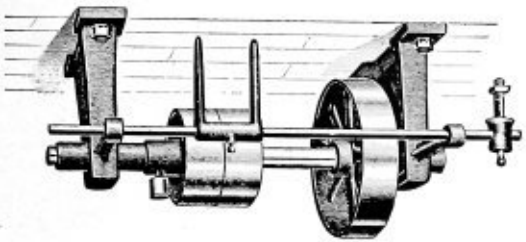
No. 6 CROWN GRINDER

This machine will meet the requirements of those needing a substantial grinding or polishing outfit at a reasonable price. All boxes are heavily babbited and fitted with grease cups. It is of good height and there is ample room from wheel to stand for plow work, grinding or polishing.

This machine with loose pulley in addition to the tight one when desired.

Arbor to floor	33	inches
Size of base	14 x 17	"
Length of steel arbor	37	"
Diameter between collars	1¼	"
Diameter of collars	4½	"
Bearings	1½ x 6	"
Pulley	5 x 4	"
Distance from wheel to stand	11½	"
Weight complete with two rests	170	lbs.
Will carry two stones	2½ x 16	inches
Each as per cut without rests	each,	$22.40
With loose pulley and grease cup added	"	25.40
Rests	"	1.30
Disc Grinder attachment	"	6.00

CROWN COUNTERSHAFTS



All loose pulleys on Countershafts have long chamber hubs fitted with grease cup and will run for years and not wear out or wabble.

	No. 1	No. 2	No. 3	No. 4	No. 6
Drive pulleys....in.	8 x1⅝	9x2	10x3½	12x4	13x4
Tight and loose pulleys.... "	3¾x1⅝	5x2	5x3	6x3½	6x4
Drop of hangers.... "	5	6¼	6½	6½	9
Length of shaft.... "	17	21	24	26	30
Diameter of shaft.... "	⅞	1	1	1⅛	1⅛
Weight complete....lbs.	24	38	44	58	75
Each....	$5.00	$7.50	$9.00	$10.00	$14.00

CROWN COLUMNS

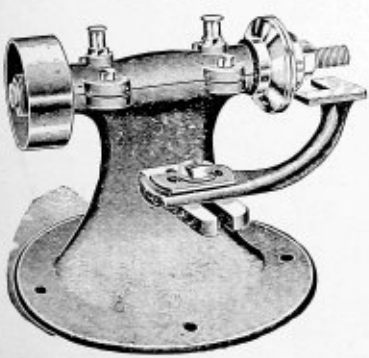
The columns have a rib around top of table to keep tools from falling off It will be found much more economical to mount Grinder on this column than to use any temporary mounting.

	No. 1	No. 2	No. 3	No. 4
Size of table....inches	6 x 8	9 x 11	11 x 13	11 x 15
Size of base.... "	9 x 12	9 x 12	12 x 16	14 x 18
Height.... "	32	32	32	28
Weight....pounds	32	37	75	100
Each....	$7.00	$7.50	$11.00	$14.00

Center Shafts and Columns are for corresponding Number Grinders.

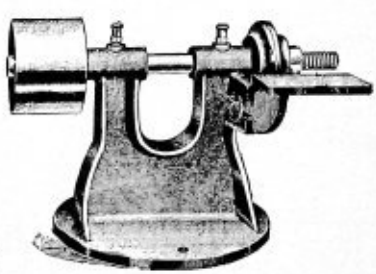
CROWN SAW GUMMERS

If Countershaft is wanted order No. 3.



No. 8

	No. 8	No. 9
Arbor to table..ins.	8	8
Size of round base.... "	12	9¼
Length of steel arbor.... "	14	14
Diameter of arbor in boxes.. "	⅞	⅞
Diam. of collars "	3½	3¼
Length of bearings.... "	.....	2½
Diameter between collars. "	¾	¾
Pulley.... "	4x3	4x3
Rest will take in wheels.... "	12x1¼	12x1¼
Weight about..lbs.	35	25
Each....	$7.00	$5.50



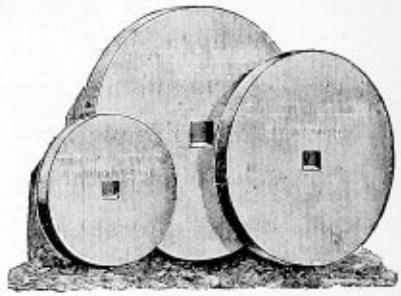
No. 9

GRINDSTONES

NOT MOUNTED

30 lbs. and under.....per ton, $.....
30 to 200 lbs..... " .....
200 lbs. and over..... " .....

All stone over 200 pounds are sold by measurement weight, less than 200 pounds by cut weight, which is actual weight on scales as they come from the lathe and is always cut on the stone.



SAMSON MOUNTED

No.	Weight, lbs.	Thickness inches	Each
1	100 to 110	1¾ to 2¼	$6.00
2	70 " 80	1¾ " 2¼	5.00
3	40 " 50	1¾ " 2¼	4.50

BI-TREADLE MOUNTED
Ball Bearing

Frame is steel firmly riveted.

Weight of stone, 55 to 60 lbs.; weight of stone and frame, 80 lbs.

Each.....$6.00

We can furnish any repairs desired.

HAND GRINDSTONES

Japanned Black

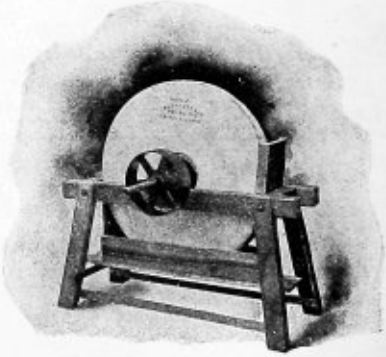
6 in. .....each, $0.70
7 " ..... " .80
8 " ..... " .90
9 " ..... " 1.00
10 " ..... " 1.15
11 " ..... " 1.25
12 " ..... " 1.50

WOODEN FRAME GRINDSTONE

FOR POWER USE
Fitted with Patent Detachable Fixture

No.	Size of Stone	Frame Only	Frame and Shaft	Complete, including Stone Fitted with Patent detachable Fixture without pulley
5	24 in. x3 in.	$6.00	$13.50	$15.00
6	30 " x4 "	7.50	15.00	18.00
7	36 " x4½ "	8.50	17.00	22.00
8	42 " x5 "	9.00	17.50	25.00
9	48 " x6 "	10.00	22.00	35.00
10	54 " x7 "	13.00	28.00	45.00
11	60 " x8 "	18.00	34.00	55.00

These prices do not include pulley. Special prices given for pulleys, when desired.



KEYSTONE IRON FRAME POWER GRINDSTONE

ALL FITTED WITH PATENT DETACHABLE FIXTURE

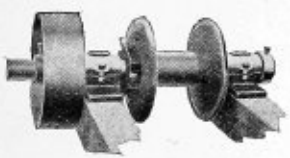
	Diameter of Stone	Thickness of Stone	Size of Shaft at Bearings	Price Complete with Stone	Frame with Shaft, Pulley and Tool Rest	Frame only without Shaft, Bearings or Tool Rest
No. 1.	50 in.	8 in.	1¾ in.	$58.00	No. 1. $35.00	$24.00
	50 "	6 "	1¾ "	53.00		
	48 "	8 "	1¾ "	56.00		
	48 "	6 "	1½ "	48.00		
	48 "	5 "	1½ "	43.00		
	46 "	6 "	1½ "	47.00		
	46 "	5 "	1½ "	42.00		
No. 2.	40 in.	6 "	1½ "	38.00	No. 2. 26.00	19.00
	40 "	5 "	1¼ "	35.00		
	38 "	6 "	1¼ "	36.00		
	38 "	5 "	1¼ "	34.00		
	36 "	6 "	1¼ "	35.00		
	36 "	5 "	1¼ "	33.00		
	36 "	4½ "	1¼ "	32.00		
No. 3.	30 in.	4½ "	1 "	26.00	No. 3. 22.00	14.00
	30 "	4 "	1 "	25.50		
	30 "	3½ "	1 "	25.00		
	30 "	3 "	1 "	24.50		

The trough is cast in one piece, making it water-tight, avoiding all joints which invariably work loose and leak. The legs are cast separate, and are securely fastened in place with two wrought-iron bolts. An adjustable tool rest, with drip pan, is furnished with each frame.

We furnish 12-inch pulley with all sizes of Keystone Frames. We will substitute any required size, charging only the actual difference in price.

Loose pulley, 12 inches in diameter, $3.00 extra.

DETACHABLE GRINDSTONE FIXTURE



Made of steel, the bearings are bored out for Babbitt, and the whole neatly finished.

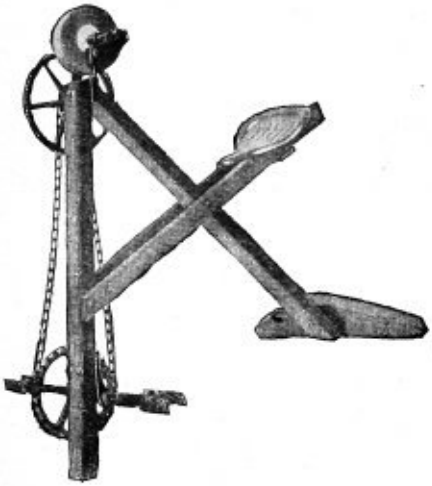
The advantage of this fixture is the ease with which it is put into the stone and adjusted so as to make the stone run true. By its use customers can return the hub when stone is worn out, and receive a new stone from the quarry absolutely ready for use, thus avoiding all the dust, dirt and laborious work of hanging and truing a grindstone.

	Shaft — Diameter	Shaft — Length	Will Hang Stone — Diameter	Will Hang Stone — Thickness	Complete without Pulley
No. 1	2 in.	2 ft. 6 in.	6 ft. 0 in. x	6 in. to 10 in.	$16.00
No. 2	1¾ "	2 " 6 "	5 " 0 " x	5 " " 9 "	15.00
No. 3	1½ "	2 " 6 "	4 " 0 " x	4 " " 6 "	12.00
No. 4	1¼ "	2 " 4 "	3 " 0 " x	3 " " 6 "	8.50
No. 5	2 "	2 " 4 "	2 " 6 " x	2 " " 5 "	7.50

THE JACKSON GRINDSTONE TRUING DEVICE

It is made in three sizes, is adjustable to any size frame and may be applied to the Keystone Iron Frame Power Grindstone or any other grindstone frame. The threaded cutter, which runs in hardened steel bearings—supplied with Patent Lubricating Device—is of hardened steel, and can be recut many times. The cutter is brought into contact with the stone by turning the wheel on the back of the device, and can be made rigid by means of two set screws shown in the engraving. It is well adapted for keeping the stone constantly in a gritty condition for grinding, and is applicable to either side of the stone.

Length of Roll	Diameter of Roll	Length over All	Each	Extra Roll
No. 1..... 5½ inches	1½ inches	13 inches	$15.00	$5.00
No. 2..... 8½ "	2 "	18 "	18.50	6.00
No. 3.....12½ "	3¼ "	24 "	36.00	11.00



GEM DIAMOND GRINDER

The frame is of selected maple, strongly braced, and fitted with an adjustable steel seat. Power is transmitted by the patented Locke steel chain. The Gem is supplied with a solid Carborundum wheel, size 5x1⅜. The shaft is extended and threaded, permitting the use of buffing or polishing wheels.

Shipped K. D., packed securely in box. Weight 47 pounds.

Each.....$7.00

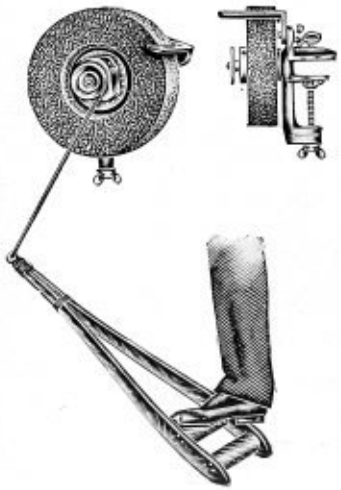
THE SPARKLER

This machine carries a Carborundum grinding wheel 4x1 inches, and for general efficiency cannot be excelled by any machine in the market twice the size.

We particularly recommend this model to mechanics or others who wish to carry a grinder as part of the equipment of the tool chest. It is strongly built with malleable castings at every point of strain, and bearings of substantial size. Weight each, 7½ pounds.

Price each.....$3.00

Price nickel plated..... 3.75



THE RAPID GRINDER

We show here an emergency and portable foot-power grinder, giving 3,000 revolutions per minute; cool cutting; wheel 6x1½ inches; made of genuine corundum. No belts to slip, no gears to break, no chains to stretch. We absolutely guarantee 40% more utility than any other grinder on the market regardless of size or price. It is the only foot-power grinder on the market with an unlimited guarantee. Just the thing for a boat house, small shop, or engine room. Weighs only 9 pounds ocmplete. It can be attached to any bench or shelf and removed in one minute's time when done with.

Each.....$5.50

THE "TORRID" FLAME TORCH

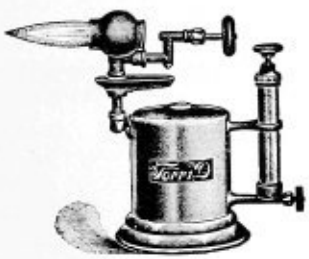
	No. 4	No. 5
Torch		
Capacity of tank	1 pint	2 pints
Consumption of oil per hour, full blast	¼ "	½ "
Height to top of burner	6½ inches	9 inches
Diameter	3 "	4½ "
Each	$3.00	$3.25

THE "TORRID" FLAME COMBINATION TORCH

No. 04 and 05

	No. 04	No. 05
Torch		
Capacity of tank	1 pint	2 pints
Consumption of oil per hour, full blast	¼ "	½ "
Height to top of burner	6½ inches	9 inches
Diameter	3 "	4¼ "
Each	$3.25	$3.50

THE "TORRID" BLAST TORCH



	No. 1	No. 2
Capacity of tank	1 pint	1 quart
Each	$3.50	$4.00
	No. 01	No. 02
With copper rest, each	$3.75	$4.25

THE "TORRID" AUTOMOBILE TORCH

Made flat to fit into tool kit. With it one can get into any small space. Cast brass top and bottom, drawn brass body.

Each $4.00

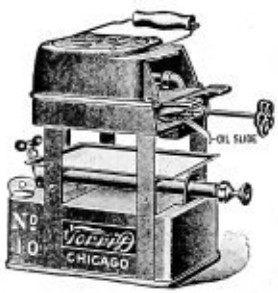
THE "TORRID" SWING BURNER FURNACE

Capacity of tank....1 gallon
Height.....12 inches
Weight.....10 pounds
Each.....$5.50

PLUMBER'S FURNACE

With Rubber Bulb (as per electro) .....each $4.00
Imp. with Pump..... " 4.50
Extra Hood, with opening for copper .....each .50

THE "TORRID" SQUARE FURNACE



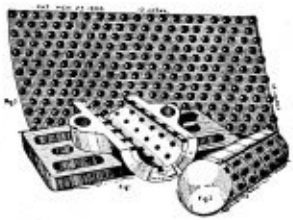
Capacity of tank.....1 gallon
Consumption of oil per hour, full blast.....¾ pint
Height.....12 inches
Weight.....14 pounds
Each.....$6.50 net

BABBITT METAL

Genuine Babbitt	per lb., $
Extra	"
No. 1	"
No. 2	"
No. 3	"
No. 4	"

RANDALL GRAPHITE SHEET LUBRICATOR

Simple—Inexpensive—Effective



Made of solidified graphite cones or tablets moulded on copper wire cloth. When used in connection with babbitt metal it makes a bearing which has no equal for machinery, especially high speed, where bearings have a tendency to heat. Sheet contains 144 square inches. Each.....$2.00

MELTING LADLES

Size.....inches,		2½	3	3½	4	5
Capacity.....lbs.,		1	1½	3¼	4	8½
Per doz.		$2.75	3.50	4.25	5.00	6.50
Size.....inches,	6	7	8	9	10	12
Capacity.....lbs.,	15	26	45	57	80	130
Extra Heavy...each,	$1.50	1.75	2.25	3.00	3.50	4.25

These Ladles are drop forged, of extra heavy mild steel, and are well finished in every respect.

SPRING STEEL SEWER ROD

Warranted spring steel. Uncoils and coils like a clock spring.

Length.....feet	25	50	75	100
Width.....inches	1¼	1¼	1½	1½
Approx. weight....lbs.	15	30	50	65
Each	$2.50	5.00	7.50	10.00

G. B. C. & CO. SPECIAL METAL

In 50 lb. boxes.....per lb., $

MAGNOLIA METAL

In 56 lb. boxes.....per lb., $

MONARCH BALL METAL

In 56 lb. boxes.....per lb., $

LEAD AND TIN

Bar Tin	per lb., $
Sheet Lead	"
Pig Lead	"
Bar Lead	"
Pig Tin	"

SOLDER

Half and Half	per lb., $
Refined Metal	"

SOLDERING COPPERS

Weight.....lbs.	1	1½	2	2½	3
Each	$0.40	.60	.80	1.00	1.20

MELTING POTS

Diameter on top, inches,	5	6	8	10½	13½
Each	$0.40	.50	.80	1.50	3.00

PLUMBER'S FORCE CUPS

Made of tough and springy rubber. Are invaluable for cleaning out closets, bowls, sinks, etc. Length 4 feet, weight less than 2 pounds.

Made with valve in cup or handle.

Per dozen.....$9.00

DIXON'S GRAPHITE CRUCIBLES

Nos.	Holding Capacity Liquid Measure Gal.	Qt.	Pt.	Height Outside ins.	Diameter at the Top Outside ins.	Diameter at the Bilge Outside ins.	Diameter at the Bottom Outside ins.	Prices
0				2	1 1/8	1 5/8	1 1/4	
00				2 3/8	1 7/8	1 7/8	1 3/8	$3.00 per doz.
000				2 1/2	1 7/8	2 1/8	1 1/2	
0000				3	2 3/8	2 1/2	1 3/4	
1			1/4	3 5/8	3 1/8	3	2 1/4	$0.40 each
2			1/2	4 1/2	3 3/4	3 5/8	2 3/4	.50 "
3			3/4	5 1/4	4 1/4	4 1/8	3	.55 "
4			1	5 5/8	4 5/8	4 1/2	3 1/4	.65 "
5			1 1/2	6	4 7/8	4 3/4	3 1/2	.75 "
6		1		6 1/2	5 1/4	5 1/8	3 3/4	.80 "
7		1	1/4	6 3/4	5 1/2	5 1/2	4	.95 "
8		1	1/2	7 1/4	5 3/4	5 3/4	4 1/4	1.00 "
9		1	3/4	7 5/8	6	6 1/4	4 1/2	1.05 "
10		1	1	8	6	6 1/2	4 3/4	1.05 "
12		2		8	6 1/4	6 3/4	5	
14		2	1	8 1/2	6 3/4	7 1/4	5 1/2	10 cents per number
16		2	1	8 3/4	7	7 1/2	5 1/2	
18		3	1	9 3/4	7 3/8	8	5 3/4	
20	1			10 1/4	7 3/4	8 3/8	6	

Nos.	Holding Capacity Liquid Measure Gal.	Qt.	Pt	Height Outside ins.	Diameter at the Top Outside ins.	Diameter at the Bilge Outside ins.	Diameter at the Bottom Outside ins.	Prices
25	1		1	10 1/4	8	8 5/8	6 1/4	No. 20 and upwards 9 1/2 cents per number
30	1	1	1	11	8 5/8	9 1/4	6 1/2	
35	1	2	1	11 5/8	9 1/4	9 3/4	7	
40	2			12 3/8	9 1/4	10 1/4	7 3/4	
45	2	1		13	9 3/4	10 1/2	7 5/8	
50	2	3		13 1/2	10 1/8	11 1/4	7 7/8	
60	3			14	10 3/8	11 5/8	8	
70	3	1		14 1/2	10 7/8	12	8 1/4	
80	3	2	1	15 3/8	11 1/8	12 3/8	8 5/8	
90	4			15 7/8	11 1/2	12 1/2	9	
100	4	2	1	16	11 7/8	13 1/8	9 3/8	
125	4	3	1	16 5/8	12 1/2	13 3/4	9 1/2	
150	6	3		18 1/4	13 1/4	14 3/4	10 3/8	
175	7	3	1	19 1/2	14 1/4	15 3/4	10 3/4	
200	9	3	1	20 1/2	15	16 1/2	11 1/4	
225	10	1	1	20 3/4	15 1/4	16 3/4	12 1/2	
250	10	3		20 1/2	15 1/4	17	11 3/4	
275	11	3		22 3/8	15	16 5/8	12 1/2	
300	12	2		22	16 1/4	17 1/2	12 1/2	

CRUCIBLES FOR FILE TEMPERING

60			17 1/4	9	9 1/4	8	13 cents per number	80		22 1/4	9	9 1/4	8	13 cents per number
70			20 1/2	9	9 1/4	8		100		24 1/2	9	9 1/4	8	

PRICES OF COVERS

No. 1	20	cents	each.
" 2	20	"	"
" 3	20	"	"
" 4	20	"	"
" 5	20	"	"
" 6	30	"	"
" 7	30	"	"
No. 8	30	cents	each
" 9	30	"	"
" 10	30	"	"
" 12	40	"	"
" 14	40	"	"
" 16	40	"	"
" 18 and upward, 2 cents per number.			

DIXON'S GRAPHITE LUBRICANTS

The Only Perfect Lubricator

The smoothness and softness possessed by graphite in a more remarkable degree than by any solid substance, early suggested its use as a lubricant.

Since its introduction, the field of its employment has gradually widened to include its regular use with oils or greases, with water, and in some cases unmixed with other materials.

Dixon's Graphite has now an established place in the ordinary and usual routine of the engineer's work It is successfully used in the lubrication of great motors, compound engines, locomotives, heavy shaft lines, and gears. It is of special value for lubricating cylinders and valves where lubrication is difficult, owing to high pressure and the use of superheated steam. It saves wear and tear in mill-steps, turbine steps, gears, heavy bearings, and in all cases where friction is severe.

Scientific theory and practical experience clearly indicate the superiority, for all purposes of lubrication, of the flake graphite rather than the amorphous or non-crystalline graphite.

Dixon's Lubricating Graphite is all of one quality, but is ground into several degrees of fineness, or, rather, sizes of flake.

No. 1 is the largest flake, and is best adapted for heavy or loose bearings, cylinders of blowing engines, etc.

No. 2 is more finely pulverized. The experience of practical engineers seems to demonstrate beyond any question that for cylinder lubrication it is the best size.

No. 635 is specially prepared graphite which is ground to a flour-like degree of pulverization; being ground to such a degree, of fineness, it mixes readily and stands up well in even light oils. It will not gum or stick, and is the very best graphite for valves, all parts of air-brakes and gas engine cylinders.

Package	Price No. 1 and No. 2	Price No. 635
1 lb. paper can, each,	$0.20	$0.40
5 " tin " "	.85	1.50
10 " " " "	1.60	3.00
25 " boxes.....per lb.,	.15	.....
50 " " ..... "	.14½	.....
100 " kegs..... "	.14	.....
350 " barrels ... "	.12	.....

Trades No. on No. 1 and No. 2 are as follows:

1 lb. package	No. 632
5 " tins	" 633
10 " "	" 634
25 " boxes	" 644
50 " "	" 645

DIXON'S WATERPROOF GRAPHITE GREASE

FOR WIRE ROPES AND CABLES

Will Resist even Running Water

Dixon's Graphite Grease penetrates in and around the strands of a wire rope, and not only prevents the dampness from taking hold, but so completely lubricates the strands that they do not wear one against the other, and on the outside protects the rope from abrasion when brought in contact with hard substances.

10 lbs.....	each, $1.50	100 lbs.....	each, $12.00
25 "	" 3.50	400 " ....per lb.,	.10
50 "	" 6.50		

DIXON'S GRAPHITE GREASE, No. 8815

This grease possesses an unusual degree of resistance to heat, although at normal temperatures, it feeds nicely through compression cups.

It is particularly valuable for lubricating engine valve gears and bearings subjected to external heat, and has also shown excellent service on flour mill, paper mill, and rolling mill machinery.

10 lbs.....	each, $1.50	100 lbs.....	each, $12.00
25 "	" 3.50	400 " ....per lb.,	.10
50 "	" 6.50		

DIXON'S GRAPHITE PIPE JOINT GREASE

FAR BETTER AND CHEAPER THAN RED LEAD

Invaluable for the joints of radiators, for steam and hot water apparatus, for gas pipes in streets or buildings, for bolts or screws, and for the various uses of gas-fitters, steam-fitters, plumbers and machinists.

Dixon's Graphite Pipe Joint Grease does not "set," and joints can remain months or years and then will yield to the ordinary pressure of the tongs, rendering unnecessary the breaking of joints, couplings and tools.

No. 693.	1 lb. package.....	per lb.	$0.20
No. 694.	5 " "	"	.18
No. 695.	10 " "	"	.15
No. 696.	25 " "	"	.14
No. 697.	50 " "	"	.13½
No. 698.	100 " "	"	.13

DIXON'S HEAVY MACHINE GRAPHITE GREASE

(Formerly known as "STANDARD")

A grease of very heavy body suitable for general heavy duty; strongly adhesive, very enduring, economical. Valuable for lubricating gears, cams, cables, chains, axles, and wherever the speeds are slow and the duty severe.

Will feed through a tallow cup.

10 lb.....	each,	$1.50
25 "	"	3.50
50 lb. keg.....	"	6.50
100 " "	"	12.00
Bbls.	per lb.	.10

DIXON'S GRAPHITE CUP GREASES

Made in six degrees of hardness numbered respectively: 0, 1, 2, 3, 4, 5. No. 0 is the softest, about like soft vaseline; No. 5 is the hardest, about like tallow.

Only fine mineral oils are used in the composition of these greases; they will not, therefore, turn rancid nor gum.

They are much more enduring and economical than plain greases. Can be used in grease cups or open bearings for the lubrication of nearly all classes of engines, machinery, and shafting.

1 lb.	each,	$0.35
5 "	"	1.50
10 "	"	2.50
25 "	per lb.,	.22
50 "	"	.20
100 "	"	.18

DIXON'S GRAPHITE WOOD GREASE

For the Lubrication of Enclosed Gears of Electric Railway Cars

Prevents noisy gears and does not ooze out of gear cases.

In Bbls. 325 to 375 lbs. ..... per lb., $0.04½

DIXON'S SOLID BELT DRESSING

Put up in one pound bars of convenient shape and size. Applied to belts while in motion, stops all slipping instantly.

Increases efficiency of belts that are too narrow for the load.

Superior to resin, tar and vegetable or animal oils. Equally satisfactory for leather, rubber, canvas or fabric belting.

One-pound bars in case ..... each, $0.25

DIXON'S "GRAPHITOLEO"

(Trade Mark Registered)

A preparation of finely pulverized pure flake graphite and refined petrolatum. Highly recommended for all light or delicate machinery, for bicycle chains and bearings, for automobile chains, bearings, slides, gears, etc.

1 lb.	each,	$0.55
5 "	"	2.50
10 "	"	4.50
25 "	per lb.,	.40
100 "	"	.35

DIXON'S GRAPHITE BRUSHES

There is a rapidly growing demand for Dixon's Graphite Brushes for dynamos and motors on account of their superiority over carbon and composition brushes. They are self-lubricating, free from grit, have good conductivity, are tough and strong, and have very long life.

Their use prevents sparking and wear of the cummutator.

DIXON'S WATERPROOF GRAPHITE GREASE

Similar in consistency to heavy machine grease; a high grade lubricant for heavy open bearings.

Possesses remarkable adhesiveness and cannot be washed off by fresh, salt, or acid waters. Unsurpassed as a rust preventive.

Especially serviceable for gears, wire ropes, hoisting chains, elevator guides, steam shovels, and brick working, quarrying and mining machinery.

10 lbs.	each,	$1.50
25 "	"	3.50
50 "	"	6.50
100 "	"	12.00

Bbls., per lb, 10c.

DIXON'S No. 688

Is a Specially Fine Graphite Lubricating Compound for the Enclosed Gears of Automobiles

1 lb.	per lb.,	$0.25
10 " cans		.20
25 " "		.20
50 " kegs		.18
100 " "		.17

DIXON'S OILED GRAPHITE No. 7847

Dixon's Oiled Graphite is made of fine Flake Graphite ground in the finest lubricating oil. Extremely valuable to erecting engineers of new machinery and useful for rubbing into packings on gaskets, etc. Recommended for steam cylinders where little oil is desired.

5 lbs.	each,	$1.25
10 "	"	2.50
25 "	"	5.50
50 " Pkgs.	per lb.,	.20
100 " "	"	.20
350 " "	"	.20

DIXON'S GRAPHITE MOTOR CHAIN COMPOUND

For lubricating automobile driving chains, for which service it is without an equal. When the chain is thoroughly cleansed and immersed in the melted compound, no other external or internal applications are required. Chains so treated will run from 3,000 to 4,000 miles without further attention. Positively prevents weakening through rust or wear.

Packed in individual boxes with complete directions for using.

Weight 3 lbs. ..... each, $1.00

DIXON'S GRAPHITE COMMUTATOR COMPOUND

Cures sparking on the commutators of dynamos and motors due to rough segments. Imparts a high gloss and glassy smoothness to commutators.

Moulded into hard round sticks ⅞-inch diameter and 3 inches long, securely wrapped in tin foil and packed in separate wooden boxes ..... each, $0.25

ALBANY GREASE

Albany Grease is made in seven numbers, all of which are of the same quality, the only difference is in the consistency, being made applicable to any climate or condition of climate or condition of circumstances.

No. 0 is very soft, used for extreme cold weather and exposed journals. Atmospheric melting point, 50° F. to 60° F.

No. 1 is harder than No. 0; used for ordinary journals in cold weather, also elevator slides. Atmospheric melting point, 60° F. to 80° F.

No. 2 is harder than No. 1; ordinarily used in moderate and warm weather on general shafting. Atmospheric melting point, 80° F. to 100° F.

No. 3 is adapted to the use of all stationary, marine and tug boat engines; also shafting, dynamos, general electrical and high speed machinery. Atmospheric melting point, 100° F. to 110° F.

No. X is of extra hardness, which will lubricate journals with entire satisfaction, where no oils or lubricants of other kind would work. Atmospheric melting point, 110° F. to 125° F.

No. XX is harder than No. X; having a higher melting point for extreme conditions. Atmospheric melting point, 125° F. to 150° F.

1 lb. Cans.....each, $0.25

5, 10, 25, and 50 lb. cans.....per lb., $0.20

ARCTIC CUP GREASE

No. 1.	Soft,	1 lb. cans.....	per lb.,	$0.15
No. 2.	Medium soft,	5 " "	"	.10
No. 3.	" "	10 " "	"	.10
No. 4.	Hard,	25 " "	"	.09

TALLOW

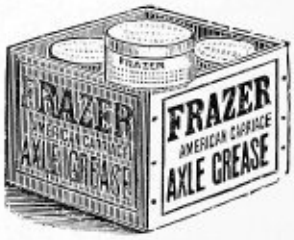
Refined Cylinder Cakes, in 100 lb. cases	per lb.,	.....
" " Solid, in barrels.....	"	.....
Common Solid, in barrels.....	"	.....
" Cake, " or less.....	"	.....

AXLE GREASES

DIXON'S EVERLASTING GRAPHITE

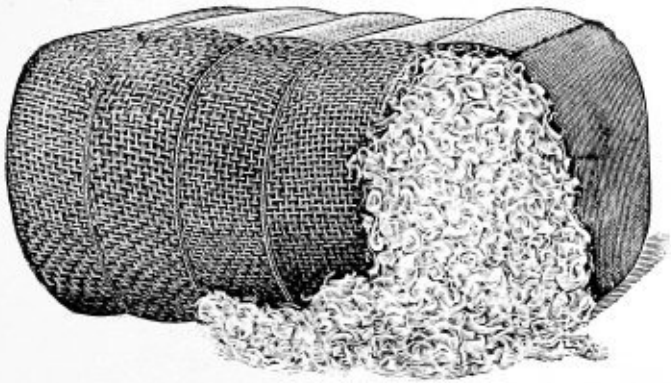
Trade No. 600.	1 lb. cans, 36 in case	each,	$0.15
Trade No. 601.	2 " " 36 "	"	.25
Trade No. 603.	10 " pkgs, 6 in case	"	1.20
Trade No. 624.	25 " "	"	2.75
Trade No. 625.	50 " kegs.....	"	5.00
Trade No. 626.	100 " "	"	9.00
	Half barrels, 200 lbs.,	per lb.,	.08½
Trade No. 627.	Barrels, about 400 lbs.	"	.08½

FRAZER'S



1	lb. tins.....	per gross,	$11.75
1	" wood boxes.....	"	11.50
3½	" pails.....	"	30.00
5	" "	"	33.00
10	" "	per dozen,	8.00
12½	" "	"	8.25
25	" "	"	15.50
Kegs, half and full barrels		per lb.,	.05

WASTE



In 100 and 500 lb. Bales

White Cotton	Bales	Less than Bales	Colored Cotton	Bales	Less than Bales
Egyptian Polishing ... ... per lb.	.....	$0.15	Fancy ..... per lb.	.....	$0.08
Extra Machine Cop ..... "	.....	.11	No. 1 ..... "	.....	.07
No. 1 ..... "	.....	.10	No. 2 ..... "	.....	.06½
No. 2 ..... "	.....	.09½	B ..... "	.....	.06

We carry No. 1 White in 10, 25, and 50 lb. pkgs.

WOOL

Colored Only

Grade	Bales	Less than Bales
Best ..... per lb.	.....	$0.15
Medium ..... "	.....	.13
Standard ..... "	.....	.11

RAGS

Grade	Bales	Less than Bales
White ..... per lb.	.....	$0.10
Colored ..... "	.....	.07

FRICTION BOARD

Granite Board

No.	Thickness inches	No. of Boards to Bundle	Size of Boards inches	Weight per Bundle	Price per lb.
4	¼	4	35x42	About 50 lbs.	$....
5	⅕	5	35x42	" 50 "	.....
6	⅙	6	35x42	" 50 "	.....
8	⅛	8	35x42	" 50 "	.....
10	1/10	10	35x42	" 50 "	.....

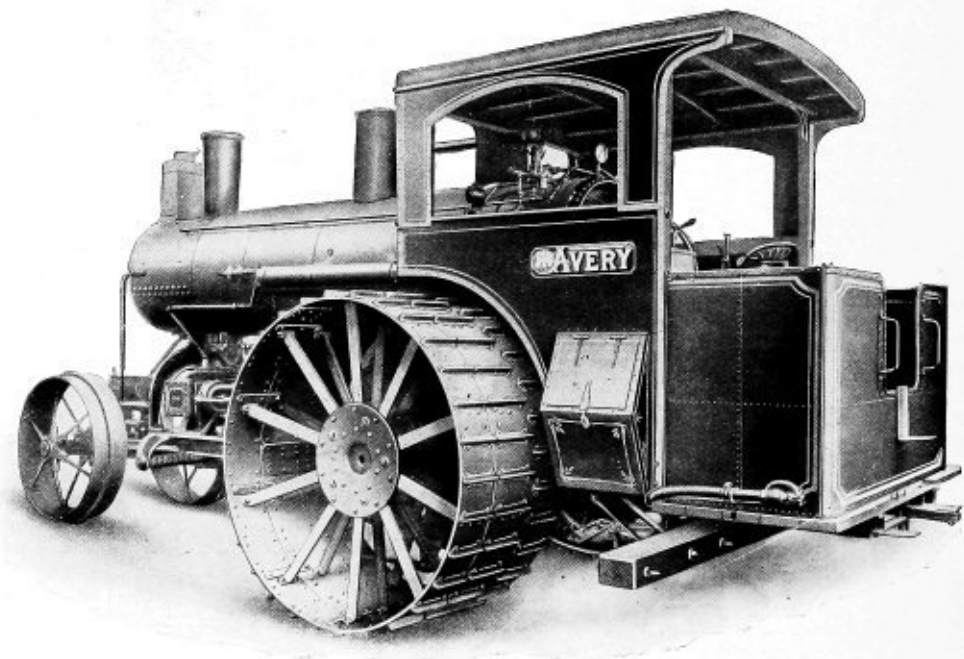
Davy Board

No.	Thickness inches	No. of Boards to Bundle	Size of Boards inches	Weight per Bundle	Price per lb.
3	⅓	3	33x44	About 50 lbs.	$....
4	¼	4	33x44	" 50 "	.....
5	⅕	5	33x44	" 50 "	.....
6	1/6	6	33x44	" 50 "	.....
7	1/7	7	33x44	" 50 "	.....
8	⅛	8	33x44	" 50 "	.....
9	1/9	9	33x44	" 50 "	.....
10	1/10	10	33x44	" 50 "	.....

RED VULCANIZED FIBRE BOARD

1/32 to ½ inch thick in sheets ..... per lb., $....

THE AVERY UNDERMOUNTED TRACTION ENGINE



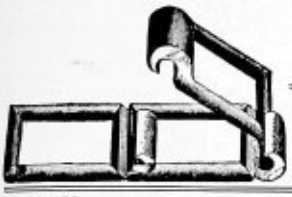
Avery undermounted, Double Cylinder Traction Engines are built in sizes 18, 20, 22 and 30 H. P.

These engines are designed as general "All-Purpose" traction engines. Boiler mounted independently, hence engine is more durable because no boiler strains. Pull of cylinders through gearing is in direct line with draft of load, hence engine is more powerful. All engine parts low down, hence handier to belt, to oil, to adjust and to keep clean. Labor saving, positive screw shaft guide.

For these reasons Avery Locomotive Undermounted Engines entirely out-class the top mounted style for heavy traction work, such as plowing, grading, heavy hauling, etc.

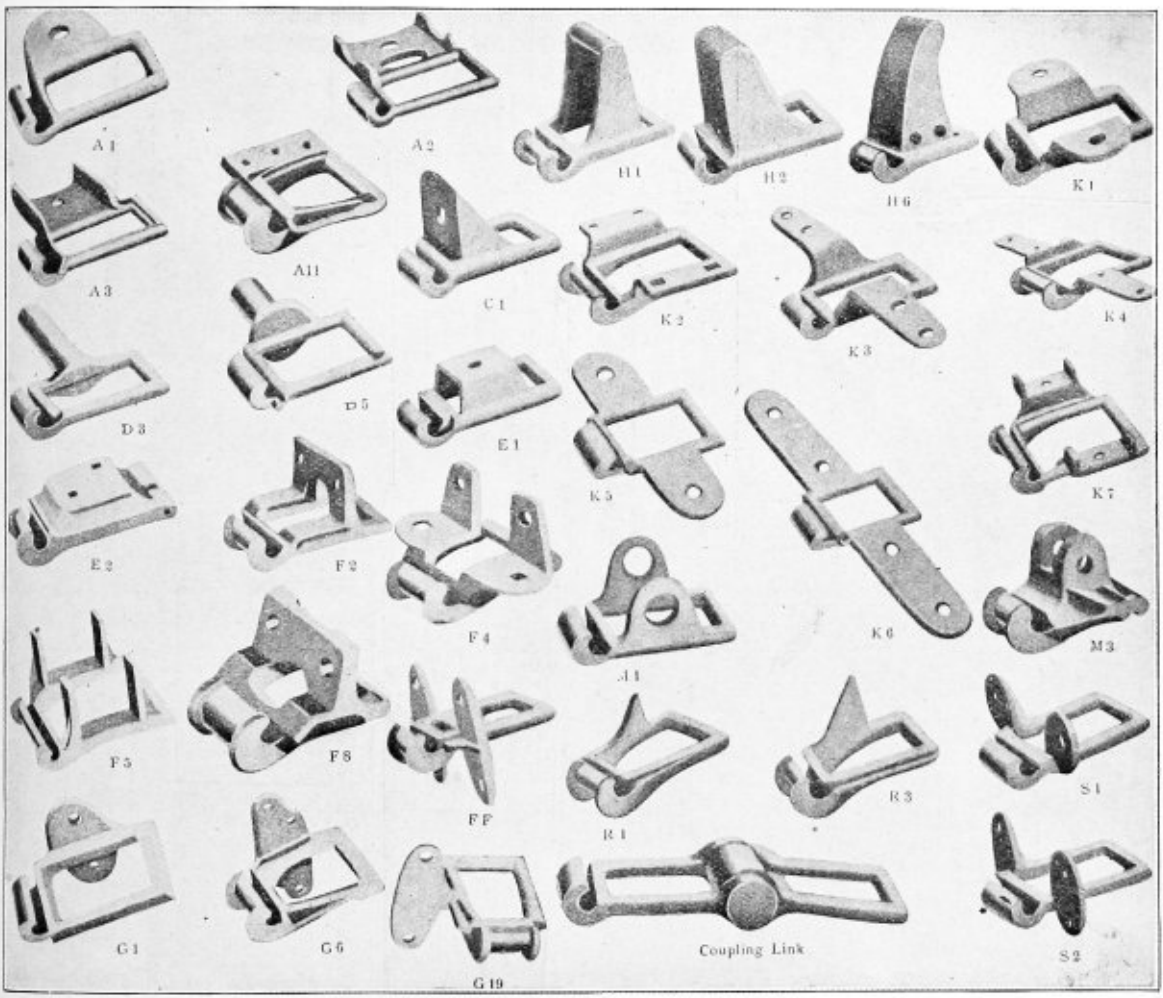
Complete catalogue and specifications furnished on application.

DETACHABLE LINK-BELT



Chain No.				25	32	33	34	35	42	45
Per Foot				$0.11	$0.11	$0.11	$0.11	$0.11	$0.12	$0.11
Couplers, per pair				.11	.14	.13	.13	.16	.16	.16
Links in 10 ft.				133	104	86	86	74	88	74
Chain No.	51	52	55	57	62	66	67	75	77	78	83
Per Foot	$0.17	$0.18	$0.16	$0.18	$0.22	$0.23	$0.23	$0.24	$0.25	$0.34	$0.35
Couplers, per pair	.16	.16	.16	.19	.22	.22	.22	.19	.22	.25	.32
Links in 10 ft.	104	80	74	52	73	60	52	46	52	46	30
Chain No.	85	88	93	95	103	108	110	114	122	124	146
Per Foot	$0.44	$0.43	$0.49	$0.53	$0.67	$0.63	$0.74	$0.85	$1.13	$1.03	$1.02
Couplers, per pair	.44	.28	.44	.54	.58	.79	.92	.84	1.58	1.19	1.29
Links in 10 ft.	30	46	30	30	39	25½	25½	37	20	30	20

LINK-BELT ATTACHMENTS



For List of Attachments, see page 394.

LINK BELT ATTACHMENTS

Attachment No.	Chain Number									
	25	32	33	34	35	42	45	51	52	55
A 1	$0.21	$0.24	$0.17	$0.21	$0.23	$0.21	$0.20	$0.25	$0.28	$0.25
A 2	.....	.25	.....	.27	.32	.....	.25	.....	.....	.32
A 3	.22	.21	.20	.....	.....	.32	.28	.....	.34	.32
C 1	.29	.32	.....	.33	.32	.29	.27	.41	.33	.31
D 3	.26	.27	.39	.....	.....	.42	.34	.....	.39	.53
D 5	.....	.....	.20	.....	.....	.....	.32	.....	.45	.35
E 1	.21	.21	.18	.24	.25	.20	.21	.....	.33	.25
E 2	.....	.....	.....	.....	.....	.....	.24	.....	.....	.....
F 2	.....	.....	.....	.....	.....	.....	.27	.....	.43	.35
G 1	.28	.25	.21	.....	.....	.....	.23	.....	.32	.....
H 1	.....	.....	.....	.....	.....	.....	.32	.....	.....	.....
H 2	.28	.....	.....	.....	.....	.....	.35	.....	.....	.....
K 1	.26	.30	.25	.29	.32	.26	.26	.32	.35	.28
K 3	.....	.39	.39	.....	.....	.37	.34	.....	.....	.....
K 5	.23	.23	.25	.....	.30	.24	.25	.33	.32	.30
K 6	.29	.38	.35	.39	.....	.37	.....	.....	.....	.....
K 7	.....	.....	.....	.....	.....	.....	.....	.43	.....	.....
M 1	.27	.32	.29	.....	.....	.....	.25	.....	.....	.28
S 1	.27	....	.25	.....	.25	.25	.23	.28	.32	.25

Attachment No.	Chain Number									
	57	62	66	67	75	77	78	83	85	88
A 1	$0.30	$0.32	.....	$0.32	.....	$0.37	$0.46	.....	.....	$0.70
A 2	.....	.33	.....	.....	.....	.....	.....	.....	.....	.....
A 3	.33	.34	.....	.....	.....	.....	.59	.....	.....	.70
A 7	.....	.....	.....	.37	.....	.....	.....	.....	.....	.63
A 11	.....	.....	.....	.34	.....	.....	.50	$0.55	.....	.60
C 1	.30	.39	$0.40	.....	.....	.....	.....	.....	.....	.77
D 5	.37	.45	.....	.43	.....	.....	.65	.67	.....	.67
E 1	.27	.....	.....	.37	$0.36	.38	.47	.57	$0.69	.64
E 2	.27	.....	.....	.....	.....	.33	.....	.57	.72	.....
F 2	.43	.....	.....	.48	.52	.64	.70	.92	.92	.80
F 4	.....	.....	.....	.....	.....	.....	.71	.....	.....	.71
F 5	.....	.....	.....	.....	.....	.....	.....	.....	.92	.....
F 8	.....	.....	.....	.....	.....	.....	.67	.....	1.06	.89

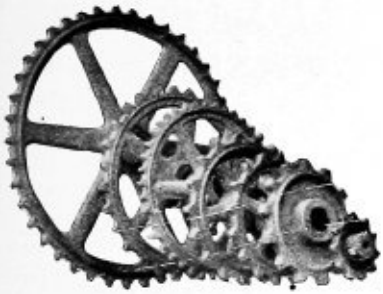
Attachment No.	Chain Number									
	57	62	66	67	75	77	78	83	85	88
FF	.....	.....	.....	$0.49	.....	.....	$0.73	$0.88	$0.81	.....
G 1	.....	.....	.....	.50	$0.52	$0.48	.59	.74	.....	$0.66
G 6	.....	.....	.....	.....	.....	.....	.68	.....	.71	.73
G 19	.....	.....	.....	.....	.....	.51	.66	.....	.....	.81
H 1	$0.41	.....	.....	.50	.45	.48	.66	.....	.72	.76
H 2	.44	.....	.....	.....	.45	.....	.70	.....	.78	.78
H 6	.....	.....	.....	.....	.....	.....	1.01	.....	.....	1.13
K 1	.35	$0.35	$0.42	.40	.39	.42	.47	.63	.....	.61
K 2	.....	.....	.....	.....	.....	.....	.....	.....	.72	.....
K 3	.....	.....	.....	.53	.....	.54	.66	.....	.85	.....
K 4	.....	.....	.....	.....	.....	.....	.....	.....	.80	.....
K 5	.....	.33	.....	.....	.....	.....	.....	.....	.....	.91
K 7	.....	.....	.....	.....	.....	.....	.....	.....	.73	.....
M 1	.....	.....	.....	.....	.....	.68	.....	.....	.....	.....
M 3	.41	.....	.....	.....	.....	.54	.70	.75	.78	.86
R 1	.....	.....	.....	.....	.29	.32	.42	.....	.....	.51
R 3	.....	.....	.....	.....	.....	.36	.50	.....	.....	.....
S 1	.....	.32	.....	.....	.....	.....	.....	.....	.89	.....
S 2	.32	.....	.....	.35	.....	.39	.52	.....	.64	.62

Attachment No.	Chain Number								
	93	95	103	108	110	114	122	124	146
A 1	.....	.....	$0.91	.....	.....	.....	.....	.....	.....
A 2	.....	.....	.....	.....	.....	$1.20	.....	.....	.....
A 11	.....	.....	.91	.....	.....	1.06	.....	$1.45	.....
D 5	.....	.....	1.02	.....	.....	.....	.....	1.73	.....
E 1	.....	.....	.94	.....	.....	.....	.....	.....	.....
E 2	.....	.....	.....	.....	.....	.....	.....	.....	$1.37
F 2	.....	$1.10	1.11	$1.18	$1.27	1.35	$1.58	1.54	1.49
F 5	.....	.....	.....	.....	.....	.....	.....	.....	1.46
F 8	.....	.....	1.26	.....	.....	1.33	.....	1.84	.....
FF	.....	.....	.....	1.12	.....	.....	.....	.....	.....
G 1	$0.90	.....	.....	.97	.....	.....	.....	1.47	.....
G 6	.....	.....	1.13	.....	.....	1.66	.....	1.58	.....
G 19	.....	.....	1.09	.....	.....	.....	.....	.....	.....
H 1	.....	.86	.95	.....	.....	.....	.....	.....	.....
H 2	.....	.96	1.02	.95	.....	.....	.....	.....	.....
K 1	.....	.....	.95	.....	.....	1.21	.....	1.56	.....
K 2	.....	.84	.....	1.02	1.12	.....	1.66	.....	1.76
K 4	.....	.....	.....	.....	.....	.....	.....	.....	1.46
K 5	.....	.....	.....	1.40	.....	.....	.....	.....	.....
M 1	.....	.....	.....	.....	.....	1.41	.....	.....	.....
M 3	.....	.....	1.16	.....	.....	.....	.....	1.59	.....
R 1	.....	.....	.82	.....	.....	.....	.....	1.21	.....

For Illustration of Attachments, see page 392.

SPROCKET WHEELS FOR LINK BELTING

BORED AND KEY-SEATED OR SET-SCREWED



No. 25 Bore 1 7/16 Inches			No. 25			No. 25		
Pitch Diam. inches	No. of Teeth	Price	Pitch Diam. inches	No. of Teeth	Price	Pitch Diam. inches	No. of Teeth	Price
1 1/4	4	$1.10	3 3/4	13	$1.40	6 1/4	22	$1.70
1 1/2	5	1.10	4	14	1.45	6 3/4	23	1.75
1 3/4	6	1.15	4 1/4	15	1.50	7	24	1.75
2	7	1.15	4 1/2	16	1.50	7 1/4	25	1.80
2 1/4	8	1.20	5	17	1.55	7 1/2	26	1.80
2 1/2	9	1.20	5 1/4	18	1.55	7 3/4	27	1.80
3	10	1.25	5 1/2	19	1.60	8	28	1.85
3 1/4	11	1.30	5 3/4	20	1.65	8 3/4	30	1.90
3 1/2	12	1.35	6	21	1.70	9	32	1.95

No. 25			No. 32			Nos. 35, 45, and 55			No. 42			No. 51		
Pitch Diam. inches	No. of Teeth	Price	Pitch Diam. inches	No. of Teeth	Price									
9 1/4	33	$2.00	14 3/4	40	$3.10	5 3/4	11	$2.10	5 3/4	13	$2.05	12 1/4	33	$2.90
9 3/4	34	2.05	15	41	3.20	6 1/4	12	2.20	6	14	2.10	13 1/4	36	3.05
10	35	2.10	16 1/4	44	3.35	6 3/4	13	2.30	7	16	2.20	14	39	3.20
10 1/4	36	2.15	16 1/2	45	3.40	7 1/4	14	2.40	7 1/2	17	2.25	14 1/2	40	3.30
10 3/4	37	2.15	17 3/4	48	3.60	7 3/4	15	2.50	8	18	2.30	15 1/2	42	3.40
11 1/2	40	2.30	23	63	4.50	8 1/4	16	2.60	8 1/4	19	2.35	16	44	3.60
12	42	2.40				8 3/4	17	2.70	8 3/4	20	2.40	16 1/2	45	3.70
12 1/2	43	2.45	Nos. 33 and 34 Bore 1 1/4 inches			9 1/4	18	2.80	9 1/4	21	2.45	18 1/4	50	4.10
12 3/4	44	2.55				9 3/4	19	2.90	9 1/2	22	2.50			
13	45	2.55	1 3/4	4	$1.25	10 1/4	20	3.00	10 1/2	24	2.60	No. 52 Bore 1 11/16 inches		
13 3/4	48	2.60	2 3/4	6	1.30	11	21	3.10	11 1/2	26	2.75			
14 1/2	50	2.70	3	7	1.35	11 1/4	22	3.20	11 3/4	27	2.80	2 3/4	6	$1.50
15	52	2.80	3 1/2	8	1.40	12	23	3.30	12 1/4	28	2.90	3 1/4	7	1.60
15 1/2	54	2.90	4	9	1.45	12 1/2	24	3.40	14	32	3.20	3 3/4	8	1.70
16	56	3.00	4 1/2	10	1.50	13	25	3.50	15 3/4	36	3.60	4 1/4	9	1.80
17	60	3.25	5	11	1.60	14	27	3.70	17 3/4	41	4.00	4 3/4	10	1.90
			5 1/2	12	1.70	14 1/2	28	3.80	20	46	4.50	5 1/4	11	2.00
No. 32 Bore 1 7/16 inches			6 1/4	14	1.80	15	29	3.90	24	55	5.50	5 3/4	12	2.10
			6 3/4	15	1.90	15 1/2	30	4.00				6 1/4	13	2.20
1 1/2	4	$1.10	7 1/4	16	2.00	16	31	4.10	No. 51 Bore 1 1/2 inches			6 3/4	14	2.30
2	5	1.15	8	18	2.10	16 1/2	32	4.20				7 1/4	15	2.40
2 1/4	6	1.20	8 1/2	19	2.20	17	33	4.30	1 3/4	5	$1.40	7 3/4	16	2.50
2 1/2	7	1.25	9	20	2.30	18	35	4.60	2 1/4	6	1.45	8 1/4	17	2.60
3	8	1.30	9 3/4	22	2.40	18 1/2	36	4.70	2 1/2	7	1.50	8 3/4	18	2.70
3 1/4	9	1.35	10 3/4	24	2.50	20 1/4	39	5.10	3	8	1.55	9	19	2.75
3 3/4	10	1.40	11 1/4	25	2.60	20 3/4	40	5.20	3 1/4	9	1.60	9 1/2	20	2.80
4	11	1.45	12	27	2.70	21 3/4	42	5.40	3 1/2	10	1.65	10	21	2.90
4 1/2	12	1.55	13	29	2.80	22 3/4	44	5.80	4	11	1.70	10 1/2	22	3.00
4 3/4	13	1.65	13 1/2	30	2.90	23 1/4	45	6.00	4 1/2	12	1.75	11	23	3.10
5 1/4	14	1.70	14 1/4	32	3.00	23 3/4	46	6.20	4 3/4	13	1.80	11 1/2	24	3.15
5 1/2	15	1.80	15 1/4	34	3.20	24 3/4	48	6.50	5	14	1.85	12	25	3.20
5 3/4	16	1.85	16	36	3.30	25 1/4	49	6.60	5 1/2	15	1.90	12 1/2	26	3.30
7 1/2	20	2.05	18 1/4	41	3.65	25 3/4	50	6.80	5 3/4	16	1.95	13	27	3.40
8	22	2.15	18 3/4	42	3.70	28	54	7.50	6 1/4	17	2.00	14 1/4	30	3.60
8 1/2	23	2.20	24	54	4.90	30	58	8.30	6 3/4	18	2.05	14 3/4	31	3.70
8 3/4	24	2.25	28 1/2	64	5.90	31	60	8.70	7	19	2.10	15 1/4	32	3.80
9 1/4	25	2.30				35 3/4	69	11.00	7 1/4	20	2.15	15 3/4	33	3.90
9 1/2	26	2.35	No. 35, 45, and 55 Bore 1 1/2 inches						7 3/4	21	2.20	16 1/4	34	4.00
10	27	2.40				No. 42 Bore 1 1/2 inches			8	22	2.25	16 3/4	35	4.10
10 1/4	28	2.45	2 1/2	5	$1.50				9	24	2.35	17 1/4	36	4.15
11 3/4	32	2.70	3	6	1.60	2	5	$1.50	9 1/4	25	2.40	17 3/4	37	4.20
12	33	2.80	3 1/2	7	1.70	2 3/4	6	1.60	9 1/2	26	2.45	18	38	4.30
12 1/4	34	2.85	4 1/4	8	1.80	3 1/4	7	1.70	10	27	2.50	19 1/4	40	4.60
13 1/4	36	2.90	4 3/4	9	1.90	3 3/4	8	1.80	10 1/4	28	2.55			
14	38	3.00	5 1/4	10	2.00	4 1/4	9	1.90	10 1/2	29	2.60	State which are the driving and which the driven wheels.		
						4 3/4	11	1.95	11	30	2.70			
						5 1/4	12	2.00	11 1/2	31	2.75			

NOTE.—An extra charge is made for wheels having special hubs, or wheels bored larger than specified above.

NOTE.—An order for a sprocket wheel should read: First, the chain number wheel is to suit; second, the pitch diameter; third, the number of teeth; fourth, the bore, and if key-seated or set-screwed; fifth, if solid or split.

SPROCKET WHEELS FOR LINK BELTING—Continued

No. 52

Pitch Diam. inches	No. of Teeth	Price
20¼	42	$4.80
21	44	5.00
22	46	5.20
23	48	5.40
23½	49	5.60
24	50	5.70
24½	51	5.80
25	52	6.00
26	54	6.20
26½	55	6.40
30¾	60	7.00

Nos. 57, 67, and 77 — Bore 2 7/16 inches

Pitch Diam. inches	No. of Teeth	Price
4	5	$1.80
4¼	6	1.90
5¼	7	2.20
6	8	2.40
6¾	9	2.60
7½	10	2.80
8¼	11	2.90
9	12	3.10
9½	13	3.25
10¼	14	3.40
11	15	3.55
11¾	16	3.70
12½	17	3.85
13¼	18	4.00
14	19	4.20
14¾	20	4.40
15½	21	4.60
16¼	22	4.80
17	23	5.00
17¾	24	5.20
18¼	25	5.40
19	26	5.60
19¾	27	5.85
20½	28	6.10
22	30	6.50
23½	32	7.00
24¼	33	7.25
25	34	7.50
25¾	35	7.75
26½	36	8.00
28	38	8.60
29¼	40	9.20
30	41	9.50
31½	43	10.10
32½	44	10.40
35¼	48	11.80
36	49	12.20
38¼	52	13.20
39¾	54	13.90
41½	56	14.60
43	59	15.80
43¾	60	16.50
47	64	18.50

No. 62 — Bore 2 7/16 inches

Pitch Diam. inches	No. of Teeth	Price
3¾	7	$1.85
4¼	8	1.95
4¾	9	2.05
5¼	10	2.15
5¾	11	2.25

No. 62

Pitch Diam. inches	No. of Teeth	Price
6¼	12	2.40
6¾	13	2.55
7½	14	2.70
8	15	2.85
8½	16	3.00
9½	18	3.20
10	19	3.35
10½	20	3.50
11	21	3.60
11½	22	3.80
12¼	23	4.00
12¾	24	4.15
13¾	26	4.45
14¾	28	4.70
15¾	30	5.10
18	34	5.60
20	38	6.20
21	39	6.35
21½	41	6.60
22¼	42	6.80
23	43	7.00
23¾	45	7.40
25¼	48	8.10
25¾	49	8.30
30½	58	10.20

No. 66 — Bore 2 7/16 inches

Pitch Diam. inches	No. of Teeth	Price
5	8	$1.90
7	11	2.20
7½	12	2.30
8½	13	2.50
9	14	2.60
10¼	16	2.80
11½	18	3.00
12	19	3.20
16¼	25	4.00

Nos. 75, 78, and 88 — Bore 2 15/16 inches

Pitch Diam. inches	No. of Teeth	Price
4¼	5	$2.40
5	6	2.60
5¾	7	2.80
6¾	8	3.00
7½	9	3.20
8¼	10	3.45
9¼	11	3.70
10	12	3.95
10¾	13	4.20
11¾	14	4.50
12½	15	4.80
13¼	16	5.10
14¼	17	5.50
15	18	5.80
15¾	19	6.20
16¾	20	6.60
17½	21	6.95
18¼	22	7.30
19¼	23	7.65
20	24	8.00
20¾	25	8.30
21¾	26	8.60
22½	27	8.90
23¼	28	9.20
24¼	29	9.50

Nos. 75, 78 and 88

Pitch Diam. inches	No. of Teeth	Price
25	30	9.80
26¾	32	10.10
27½	33	10.70
28¼	34	11.10
29¼	35	11.50
30	36	11.90
31	37	12.40
32½	39	13.40
33½	40	13.90
35	42	14.90
36¾	44	15.90
38½	46	17.10
40¼	48	18.30
41	49	19.00
41¾	50	19.70
45	54	22.50
48½	58	24.80
50	60	26.00

Nos. 83 and 93 — Bore 2 15/16 inches

Pitch Diam. inches	No. of Teeth	Price
12	9	$4.80
15½	12	6.30
16	13	6.90
17¾	14	7.40
20	16	8.30
24	19	10.20
25½	20	10.90
28½	22	12.50
30	24	14.20
34	27	16.50
41	32	21.50
50	40	30.30
54	42	35.20

Nos. 85 and 95 — Bore 2 15/16 inches

Pitch Diam. inches	No. of Teeth	Price
7¾	6	$4.00
10	8	5.00
11¾	9	5.50
12¾	10	6.05
14	11	6.50
15¼	12	6.95
16½	13	7.40
17¾	14	7.85
20¼	16	8.80
22½	18	10.25
24	19	11.00
25¼	20	11.90
27¾	22	13.60
30¾	24	15.40
31½	25	16.25
33	26	17.15
34	27	18.25
35½	28	20.40
48½	38	30.00
60	47	45.00

No. 103 — Bore 3 7/16 inches

Pitch Diam. inches	No. of Teeth	Price
6	6	$3.60
7	7	4.00
8	8	4.40
9	9	4.80
9¾	10	5.25
10¾	11	5.65

No. 103

Pitch Diam. inches	No. of Teeth	Price
11¾	12	6.05
12¾	13	6.45
13¾	14	6.85
14¾	15	7.25
15¾	16	7.65
16¾	17	8.05
17½	18	8.45
18½	19	8.90
19½	20	9.40
21½	22	10.35
22½	23	10.80
23½	24	11.20
25½	26	12.25
26½	27	12.75
27½	28	13.30
29¼	30	14.40
30¼	31	15.20
31¼	32	16.00
32½	33	16.80
33¼	34	17.60
35¼	36	19.25
37¼	38	21.20
39¼	40	23.10
41	42	24.80
43	44	26.50
45	46	28.20
47	48	29.90
47¾	49	30.75
52¾	54	34.90
58¾	60	40.00
64¾	66	45.50

Nos. 108 and 110 — Bore 3 7/16 inches

Pitch Diam. inches	No. of Teeth	Price
9½	6	$5.20
12¼	8	6.20
13¾	9	7.25
16¾	11	9.00
18¼	12	9.90
19¾	13	10.90
20	14	11.80
24¼	16	14.00
27¼	18	16.25
30¼	20	18.50
36	24	24.00
42	28	29.30
45	30	32.00
48	32	37.00

No. 114 — (Bore 3 7/16 inches

Pitch Diam. inches	No. of Teeth	Price
7	7	$4.15
8½	8	4.50
9½	9	4.85
10½	10	5.20
11½	11	5.65
12¾	12	6.10
13¾	13	6.55
14¾	14	7.00
16¾	16	8.00
17¾	17	8.60
18¾	18	9.20
20	19	9.80
21	20	10.40
22	21	11.10

No. 114

Pitch Diam. inches	No. of Teeth	Price
23	22	11.80
24	23	12.45
25	24	13.10
26¾	26	14.60
31¼	30	17.50
33	32	19.30
35	34	21.10
36	35	22.00
37½	36	23.00
42½	41	28.10
47½	46	33.10
48½	47	34.90
49½	48	36.00

No. 122 — Bore 3 15/16 inches

Pitch Diam. inches	No. of Teeth	Price
16	8	$9.75
17¾	9	10.80
19¾	10	12.80
21½	11	14.60
23½	12	16.50
27½	14	20.00
29½	15	21.80
31¼	16	23.60
35¼	18	27.80
37	19	30.00
40¾	21	34.00
42½	22	36.00

No. 124 — Bore 3 15/16 inches

Pitch Diam. inches	No. of Teeth	Price
9½	7	$5.50
10½	8	6.20
11¾	9	6.90
13	10	7.70
14½	11	8.50
15¾	12	9.40
17	13	10.20
18¼	14	11.00
19½	15	12.00
20¾	16	13.00
22	17	14.20
23	18	15.20
24½	19	16.20
26	20	17.30
28½	22	19.50
29¾	23	20.60
31	24	21.70
32½	25	22.80
35	27	25.00
36¼	28	26.10
39	30	28.50
41½	32	30.80
44	34	33.00
47	36	35.30
49½	38	38.00
62	48	52.00
72½	56	66.00

No. 146 — Bore 3 15/16 inches

Pitch Diam. inches	No. of Teeth	Price
16	8	$12.00
18	9	12.65
20	10	13.70
32	16	20.00
36	18	24.00

NOTE.—An extra charge is made for wheels having special hubs, or wheels bored larger than specified above. An order for a sprocket wheel should read: First, the chain number wheel is to suit; second, the pitch diameter; third, the number of teeth; fourth, the bore, and if key-seated or set-screwed; fifth, if solid or split. State which are the driving and which the driven wheels.

ELEVATOR BUCKETS

THE "ACME" STEEL

The "Acme" Bucket is made of steel formed up from one piece with round corners and round bottom. The bucket is constructed in such a manner that the lap comes on the end, making a double thickness and brace, which adds largely to the strength and stiffness of the cup.

Size of Bucket		Regular Gauge for Mill and Elevator Work							"Extra Heavy" for Elevating Cement, Coal, Ores, Stone, etc.				
Width on Belt, inch	Projection inch	23	22	21	20	19	18	17	16	14	12	10	8
3	3	$0.09	....	....	....	....	....	....	$0.28	....	....	....	....
3½	3	.10	....	....	....	....	....	....	.29	....	....	....	....
4	3	.11	....	....	....	....	....	....	.30	....	....	....	....
4½	3	.12	....	....	....	....	....	....	.31	....	....	....	....
4	3½	....	$0.12	....	....	....	....	....	.33	$0.35	....	....	....
5	4	....	....	0.18	....	....	....	....	.39	.44	$0.52	....	....
6	4	....	....	.20	....	....	....	....	.41	.46	.56	....	....
7	4	....	....	.22	....	....	....	....	.43	.50	.60	....	....
8	4	....	....	.24	....	....	....	....	.47	.54	.64	....	....
5	4½	....	....	....	$0.26	....	....	....	.45	.50	.59	....	....
6	4½	....	....	....	.28	....	....	....	.47	.52	.63	$0.78	....
7	4½	....	....	....	.30	....	....	....	.49	.54	.67	.82	....
8	4½	....	....	....	.32	....	....	....	.52	.58	.71	.88	....
6	5	....	....	....	....	$0.37	....	....	.51	.58	.69	.86	$1.07
7	5	....	....	....	....	.39	....	....	.55	.62	.74	.92	1.15
8	5	....	....	....	....	.41	....	....	.59	.66	.78	.98	1.23
10	5	....	....	....	....	.45	....	....	.67	.74	.87	1.14	1.39
11	5	....	....	....	....	.46	....	....	.69	.76	.93	1.20	1.47
12	5	....	....	....	....	.50	....	....	.73	.80	.99	1.26	1.55
6	5½	....	....	....	....	....	$0.42	....	.59	.66	.81	1.05	1.34
7	5½	....	....	....	....	....	.44	....	.63	.70	.87	1.11	1.42
8	5½	....	....	....	....	....	.46	....	.67	.75	.93	1.17	1.50
10	5½	....	....	....	....	....	.54	....	.76	.88	1.06	1.32	1.66
11	5½	....	....	....	....	....	....	$0.57	.79	.92	1.10	1.38	1.72
12	5½	....	....	....	....	....	....	.60	.83	.96	1.14	1.44	1.78

Larger sizes on application.

THE "EMPIRE" BUCKET

The Empire Cup is made of tin for small sizes, and of smooth refined iron for the larger. These buckets are all double seamed by a steam-power press made expressly for this purpose. It is the only machine of the kind in the country, and enables us to produce a bucket which for smoothness of finish and general utility has no superior in the market.

TIN						IRON					
Width on Belt	Projection	Each	Width on Belt	Projection	Each	Width on Belt	Projection	Each	Width on Belt	Projection	Each
2	2	$0.06	4	3½	$0.12	5	4	$0.15	11	6	$0.33
2½	2½	.07	4½	3½	.13	5½	4	.16	12	6	.36
3	3	.08	5	4	.15	6	4	.17	14	6	.42
3½	3	.09	5½	4	.16	7	4½	.21	16	6	.50
4	3	.11	6	4	.17	8	5	.25	18	6	.60
						9	5	.27	20	6	.65
						10	5½	.30			

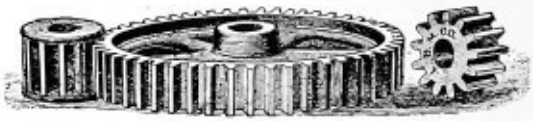
For Elevator Bolts, see page 555.

"MOSHER" BAG HOLDERS

This Holder is a great success. It is the only Bag Holder adapted to *all* sizes of bags, from a 48-pound flour sack to a 6-bushel gunny bag One man can take off and put on from 15 to 20 bags a minute. *Does not tear the bag.* It is well made; malleable iron jaws wrought iron pipe standards, steel springs, and only weighs 20 pounds.

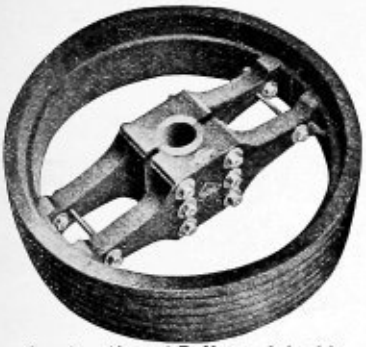
Each.....$5.00

SPUR GEARING



The following prices cover Gears bored and key-seated or set-screwed:

No. of Pattern	No. of Teeth	Diameter	Face	Pitch in.	Each	No. of Pattern	No. of Teeth	Diameter	Face	Pitch in.	Each
139	16	2.55	1¼	½	$1.40	148	100	31.83	.....	.....	$12.75
161	18	2.86	1¼	½	1.50	127	14	5.01	3	1⅛	2.50
135	12	2.39	1½	⅝	1.50	214	29	10.38	3	1⅛	4.75
153	15	2.98	1½	⅝	1.65	225	12	4.77	2	1¼	2.40
141	20	3.98	1½	⅝	1.90	122	12	4.77	3¼	1¼	2.50
198	24	4.77	1½	⅝	2.15	160	13	5.17	3¼	1¼	2.65
111	45	8.95	1½	⅝	2.50	142	14	5.57	3¼	1¼	2.80
219	65	12.93	1½	⅝	3.15	113	15	5.97	3¼	1¼	3.00
18	13	3.10	3	¾	2.50	136	16	6.37	3¼	1¼	3.20
209	13	3.10	1¾	¾	1.65	204	17	6.76	3¼	1¼	3.40
108	14	3.34	1¾	¾	1.75	106	20	7.96	3¼	1¼	3.90
154	24	5.73	1¾	¾	2.30	10	21	8.35	3¼	1¼	4.10
155	25	5.97	1¾	¾	2.50	239	27	10.74	3¼	1¼	5.15
152	39	9.31	1¾	¾	3.25	118	30	11.94	3¼	1¼	5.70
19	40	9.55	2½	¾	3.75	121	40	15.95	3¼	1¼	7.50
156	46	10.98	1¾	¾	4.25	105	60	23.87	3¼	1¼	11.00
134	60	14.33	1¾	¾	4.50	194	75	29.84	3¼	1¼	13.70
224	11	3.06	2¼	⅞	1.25	112	80	31.83	3¼	1¼	14.55
123	13	3.62	2¼	⅞	1.70	133	90	35.81	3¼	1¼	16.35
157	14	3.90	2	⅞	1.85	202	14	6.13	3½	1⅜	3.30
143	15	4.18	2½	⅞	1.90	203	98	42.90	3½	1⅜	22.00
192	16	4.46	2¼	⅞	2.05	162	10	4.77	4	1½	3.15
145	18	5.01	2¼	⅞	2.25	163	12	5.73	4	1½	3.75
11	20	5.57	2¼	⅞	2.40	126	13	6.21	5	1½	4.70
125	22	6.13	2¼	⅞	2.60	138	14	6.68	4	1½	4.25
181	30	8.36	2¼	⅞	3.40	101	15	7.16	4	1½	4.50
196	31	8.63	2¼	⅞	3.55	117	16	7.64	4	1½	4.80
197	33	9.19	2¼	⅞	3.75	102	18	8.59	4½	1½	5.50
124	40	11.14	2¼	⅞	4.40	164	20	9.55	4	1½	5.85
12	46	12.81	2	⅞	5.00	165	24	11.46	4	1½	7.00
146	50	13.93	2¼	⅞	5.40	216	26	12.44	4	1½	7.55
13	75	20.89	2¼	⅞	7.80	237	28	13.37	3½	1½	8.00
220	78	21.72	2¼	⅞	8.10	166	29	13.85	4	1½	8.30
158	94	26.18	2	⅞	9.70	104	36	17.19	4	1½	10.25
190	102	28.41	2¼	⅞	10.75	167	45	21.49	4	1½	12.65
132	114	31.75	2¼	⅞	11.90	116	46	21.96	4	1½	12.90
206	10	3.18	3½	1	2.10	103	50	23.87	4	1½	14.00
226	11	3.50	2½	1	2.00	215	53	25.30	4	1½	14.85
109	12	3.82	2½	1	2.10	217	56	26.74	4	1½	15.65
144	13	4.14	2½	1	2.20	130	60	28.65	4	1½	16.75
151	14	4.46	2½	1	2.30	131	72	34.38	4	1½	20.00
16	15	4.77	2½	1	2.40	128	83	39.63	4	1½	23.00
129	16	5.09	2½	1	2.50	210	96	45.88	4	1½	30.00
107	18	5.73	2½	1	2.70	199	111	53.00	4	1½	40.00
119	20	6.37	2½	1	2.90	168	12	6.68	5	1¾	5.00
140	21	6.68	2½	1	3.05	169	13	7.24	5	1¾	5.35
14	25	7.96	2½	1	3.50	149	14	7.80	5	1¾	5.80
230	26	8.28	2	1	3.60	170	15	8.36	5	1¾	6.25
207	30	9.55	3	1	4.25	171	16	8.91	5	1¾	6.75
110	36	11.46	2½	1	4.85	172	18	10.03	5	1¾	7.55
137	37	11.78	2½	1	5.00	173	24	13.37	5	1¾	10.10
15	50	15.92	2½	1	6.60	174	36	20.05	5	1¾	15.35
120	63	20.05	2½	1	8.20	205	40	22.28	5	1¾	17.00
159	72	22.92	2½	1	9.25	175	52	28.97	5	1¾	25.00
17	75	23.87	2½	1	9.65	150	86	47.91	5	1¾	45.00
147	88	28.01	2½	1	11.25	.....	.....	.....	.....	.....	.....



Construction of Pulleys, 9 to 36 inches inclusive

DODGE PATENT INDEPENDENCE WOOD SPLIT PULLEY

Construction of Pulleys up to and Including 8 Inches Diameter

NON-LISTED SIZES

For a pulley whose diameter is expressed in fractions of an inch, or in inches not listed, use the list of the next larger diameter listed.

For a pulley whose face width is expressed in fractions of an inch, or in inches not listed, use the list of the next wider face listed.

If face exceeds widest size listed, extend the list at the same rate per inch as that existing between last two sizes listed.

Diam. Inches	3	4	5	6	8	10	12	14	16	18	20	22	24
4	$2.80	$2.90	$3.10	$3.30	$3.70	$4.10	$4.50	.....	.....	.....	.....	.....	.....
5	2.85	2.95	3.20	3.40	3.85	4.30	4.75	.....	.....	.....	.....	.....	.....
6	2.90	3.00	3.25	3.50	4.00	4.50	5.00	.....	.....	.....	.....	.....	.....
7	2.95	3.05	3.35	3.60	4.15	4.70	5.25	$5.80	.....	.....	.....	.....	.....
8	3.00	3.10	3.40	3.70	4.30	4.90	5.50	6.10	.....	.....	.....	.....	.....
9	3.10	3.25	3.60	3.90	4.55	5.20	5.85	6.50	.....	.....	.....	.....	.....
10	3.25	3.40	3.75	4.10	4.80	5.50	6.20	6.90	$7.60	.....	.....	.....	.....
11	3.50	3.70	4.10	4.50	5.30	6.10	6.90	7.70	8.50	.....	.....	.....	.....
12	3.75	4.00	4.45	4.90	5.80	6.70	7.60	8.50	9.40	$10.30	.....	.....	.....
13	.....	4.30	4.80	5.30	6.30	7.30	8.30	9.30	10.30	11.30	.....	.....	.....
14	.....	4.60	5.15	5.70	6.80	7.90	9.00	10.10	11.20	12.30	$13.40	.....	.....
15	.....	4.90	5.50	6.10	7.30	8.50	9.70	10.90	12.10	13.30	14.50	.....	.....
16	.....	5.20	5.85	6.50	7.80	9.10	10.40	11.70	13.00	14.30	15.60	$16.90	.....
17	.....	5.50	6.20	6.90	8.30	9.70	11.10	12.50	13.90	15.30	16.70	18.10	.....
18	.....	5.80	6.55	7.30	8.80	10.30	11.80	13.30	14.80	16.30	17.80	19.30	$20.80
19	.....	6.10	6.90	7.70	9.30	10.90	12.50	14.10	15.70	17.30	18.90	20.50	22.10
20	.....	6.40	7.25	8.10	9.80	11.50	13.20	14.90	16.60	18.30	20.00	21.70	23.40
22	.....	7.00	7.95	8.90	10.80	12.70	14.60	16.50	18.40	20.30	22.20	24.10	26.00
24	.....	7.70	8.80	9.90	12.10	14.30	16.50	18.70	20.90	23.10	25.30	27.50	29.70
26	.....	8.40	9.65	10.90	13.40	15.90	18.40	20.90	23.40	25.90	28.40	30.90	33.40
28	.....	9.10	10.50	11.90	14.70	17.50	20.30	23.10	25.90	28.70	31.50	34.30	37.10
30	.....	9.80	11.35	12.90	16.00	19.10	22.20	25.30	28.40	31.50	34.60	37.70	40.80
32	.....	10.50	12.20	13.90	17.30	20.70	24.10	27.50	30.90	34.30	37.70	41.10	44.50
34	.....	11 30	13.15	15.00	18.70	22.40	26.10	29.80	33.50	37.20	40.90	44.60	48.30
36	.....	12.10	14.10	16.10	20.10	24.10	28.10	32.10	36.10	40.10	44.10	48.10	52.10
38	.....	.....	.....	17.20	21.50	25.80	30.10	34.40	38.70	43.00	47.30	51.60	55.90
40	.....	.....	.....	18.30	22.90	27.50	32.10	36.70	41.30	45.90	50.50	55.10	59.70
42	.....	.....	.....	19.60	24.60	29.60	34.60	39.60	44.60	49.60	54.60	59.60	64.60
44	.....	.....	.....	20.90	26.30	31.70	37.10	42.50	47.90	53.30	58.70	64.10	69.50
46	.....	.....	.....	22.30	28.10	33.90	39.70	45.50	51.30	57.10	62.90	68.70	74.50
48	.....	.....	.....	23.80	30.00	36.20	42.40	48.60	54.80	61.00	67.20	73.40	79.60
50	.....	.....	.....	25.40	32.00	38.60	45.20	51.80	58.40	65.00	71.60	78.20	84.80
52	.....	.....	.....	27.10	34.10	41.10	48.10	55.10	62.10	69.10	76.10	83.10	90.10
54	.....	.....	.....	28.90	36.30	43.70	51.10	58.50	65.90	73.30	80.70	88.10	95.50
56	.....	.....	.....	30.80	38.60	46.40	54.20	62.00	69.80	77.60	85.40	93.20	101.00
58	.....	.....	.....	32.80	41.00	49.20	57.40	65.60	73.80	82.00	90.20	98.40	106.60
60	.....	.....	.....	34.90	43.50	52.10	60.70	69.30	77.90	86.50	95.10	103.70	112.30
62	.....	.....	.....	37.10	46.10	55.10	64.10	73.10	82.10	91.10	100.10	109.10	118.10
64	.....	.....	.....	39.40	48.80	58.20	67.60	77.00	86.40	95.80	105.20	114.60	124.00
66	.....	.....	.....	41.90	51.80	61.70	71.60	81.50	91.40	101.30	111.20	121.10	131.00
68	.....	.....	.....	44.50	54.90	65.30	75.70	86.10	96.50	106.90	117.30	127.70	138.10
70	.....	.....	.....	47.20	58.10	69.00	79.90	90.80	101.70	112.60	123.50	134.40	145.30
72	.....	.....	.....	50.00	61.40	72.80	84.20	95.60	107.00	118.40	129.80	141.20	152.60
78	.....	.....	.....	.....	71.90	84.80	97.70	110.60	123.50	136.40	149.30	162.20	175.10
84	.....	.....	.....	.....	83.30	97.70	112.10	126.50	140.90	155.30	169.70	184.10	198.50
90	.....	.....	.....	.....	95.60	111.50	127.40	143.30	159.20	175.10	191.00	206.90	222.80
96	.....	.....	.....	.....	109.00	126.50	144.00	161.50	179.00	196.50	214.00	231.50	249.00
102	.....	.....	.....	.....	123.70	143.00	162.30	181.60	200.90	220.20	239.50	258.80	278.10
108	.....	.....	.....	.....	139.30	160.40	181.50	202.60	223.70	244.80	265.90	287.00	308.10
114	.....	.....	.....	.....	155.80	178.70	201.60	224.50	247.40	270.30	293.20	316.10	339.00
120	.....	.....	.....	.....	173.20	197.90	222.60	247.30	272.00	296.70	321.40	346.10	370.80

LIST PRICES FOR SPECIALS AND EXTRAS ON WOOD SPLIT PULLEYS

SPECIAL BORES

For boring pulleys to fit shaft when bore is less than standard, or for boring pulleys larger than standard but smaller than bores shown in the following table, add 10 per cent to regular list.

PRICE FOR EXTRA LARGE BORES

	Add to list 15% inches	Add to list 20% inches	Add to list 25% inches	Add to list 35% inches	Add to list 50% inches	Add to list 65% inches
Under 12 inch diameter....	3 9/16 to 4	4 1/16 to 5	5 1/16 to 6	....	....	....
From 12 to 48 inches diam.	4 1/16 to 4 1/2	4 9/16 to 6	6 1/16 to 7 1/2	7 9/16 to 10	....	....
From 49 to 72 inches diam.	5 1/16 to 6	6 1/16 to 7 1/2	7 9/16 to 9 1/2	9 9/16 to 12	12 1/16 to 15	15 1/16 to 18
From 73 to 96 inches diam.	7 1/16 to 8	8 1/16 to 10	10 1/16 to 12	12 1/16 to 15	15 1/16 to 18	18 1/16 to 21
From 97 to 120 inches diam.	9 1/16 to 10	10 1/16 to 12 1/2	12 9/16 to 15	15 1/16 to 18	18 1/16 to 21	21 1/16 to 25

For bores in excess of above limits, net prices will be made on application.

Double Flange Pulleys

FLANGE PULLEYS

For flange pulleys add to regular list 40 cents for each inch in diameter of pulley for single flange, 60 cents for double flange, and 80 cents for triple flange, crating included.

WOOD BUSHINGS

One complete bushing of length required by pulley hub is furnished with each pulley Without charge.

EXTRA OR SEPARATE BUSHINGS

10 inches or less of complete bushing $0.50
More than 10 inches of complete bushing, per in. .05

BABBITTED WOOD BUSHINGS

For Loose Pulleys

50 cents per inch in length.

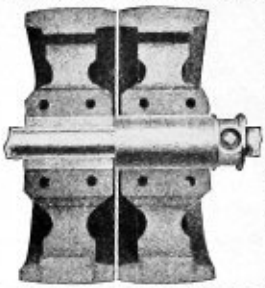
STEP CONE PULLEYS

Treat each step as a separate pulley, combining the list and add 50 per cent.

TAPER CONE PULLEYS

Use list for largest diameter and full width of face, and add 25 per cent to make total list.

WOOD TIGHT AND LOOSE PULLEYS



The loose pulley is furnished with an iron sleeve, accurately bored and fitted with oil chambers, or for any style of grease or oil cups desired. Should there be any wear, it is a very simple and inexpensive operation to babbitt the sleeve or replace it with a new one.

For price of tight and loose sleeves. add list price below to regular pulleys of same size.

Bore	Face of Pulley in inches	Each	Bore	Face of Pulley in inches	Each	Bore	Face of Pulley in inches	Each
1 3/16	3	$1.85	1 11/16	3	$2.20	1 15/16	12	$6.60
1 3/16	4	2.20	1 11/16	4	2.50	2 3/16	4	2.90
1 3/16	5	2.50	1 11/16	5	2.85	2 3/16	5	3.50
1 3/16	6	2.80	1 11/16	6	3.35	2 3/16	6	4.15
1 3/16	8	3.60	1 11/16	8	4.15	2 3/16	8	5.35
1 3/16	10	4.40	1 11/16	9	4.55	2 3/16	10	6.50
1 3/16	12	5.45	1 11/16	10	4.95	2 3/16	12	7.65
1 7/16	3	2.00	1 11/16	12	5.75	2 7/16	4	3.30
1 7/16	4	2.35	1 15/16	3	2.35	2 7/16	5	3.95
1 7/16	5	2.70	1 15/16	4	2.70	2 7/16	6	4.65
1 7/16	6	3.00	1 15/16	5	3.20	2 7/16	8	6.00
1 7/16	8	3.85	1 15/16	6	3.70	2 7/16	10	7.65
1 7/16	10	4.70	1 15/16	8	4.70	2 7/16	12	9.00
1 7/16	12	5.55	1 15/16	10	5.65	2 7/16	14	10.40

For Split Sleeves add 15 per cent to above prices.

STANDARD SLEEVES ARE MADE AS FOLLOWS:

Bore	Outside Diameter	Bore	Outside Diameter
1 3/16 to 1 3/4	2 7/16	2 3/16 to 3	4
1 3/16 " 2 1/4	3	3 1/16 " 3 1/2	4 1/2
2 5/16 " 2 3/4	3 1/2	.....	.....

KEYSEATING

PRICE LIST FOR KEYSEATING WOOD PULLEYS

Size of Shaft inches	Width of Face of Pulleys			
	12 inches or less	13 to 16 inches	17 to 20 inches	21 to 24 inches
3 or less	$1.25	$1.75	$2.35	$3.00
3 1/16 to 3 1/2	1.30	1.80	2.45	3.10
3 9/16 " 4	1.50	2.00	2.70	3.35
4 1/16 " 4 1/2	2.00	2.50	3.00	3.50
4 9/16 " 5	2.35	3.00	3.70	4.35
5 1/16 " 6	3.00	3.75	4.50	5.35
6 1/16 " 7	3.75	4.50	5.25	6.10

For other sizes than shown here, prices on application.

OFFSET HUBS

For pulleys with offset hubs, add 10 per cent to final list arrived at, after adding for any extras, such as large bores, flanges, etc.

THE AMERICAN ALL WROUGHT STEEL SPLIT PULLEY

It is made of the best grade of mild steel. The parts are struck up in dies and then assembled. It weighs about half as much, size for size, as a cast iron pulley. It saves power. It gripes the shaft to perfection. It is safe under high speeds. It is bushed to fit shafts of different sizes. It can be applied without stripping the shaft, saving time and trouble. It does not shrink or swell or warp or burn. The pulley as put upon the market is a model in strength, lightness, balance, and elegant design.

Diam. in in.	FACE IN INCHES									
	2"	3"	4"	5"	6"	8"	10"	12"	14"	16"
6	$3.15	$3.30	$3.45	$3.75	$4.05	.....	.....	.....	.....	.....
7	3.22	3.38	3.60	3.90	4.20	.....	.....	.....	.....	.....
8	3.30	3.45	3.75	4.05	4.35	$4.95	$5.60	.....	.....	.....
9	3.38	3.60	3.90	4.20	4.50	5.10	5.75	.....	.....	.....
10	3.45	3.75	4.05	4.35	4.65	5.25	5.90	$6.45	.....	.....
11	3.65	3.90	4.20	4.50	4.80	5.40	6.00	6.90	.....	.....
12	3.90	4.20	4.63	4.80	5.33	5.78	6.45	7.65	.....	.....
13	4.05	4.35	4.80	5.20	5.62	6.43	7.20	8.40	.....	.....
14	4.20	4.50	5.20	5.65	6.15	7.05	8.03	9.00	.....	.....
15	4.35	4.65	5.45	5.80	6.55	7.65	8.80	9.75	.....	.....
16	4.50	4.95	5.75	6.10	6.90	8.25	9.45	10.50	.....	.....
17	.....	5.25	6.00	6.50	7.28	8.78	10.05	11.25	.....	.....
18	.....	5.55	6.38	7.00	7.65	9.30	10.65	12.00	.....	.....
19	.....	5.80	6.75	7.50	8.25	10.13	11.25	12.90	.....	.....
20	.....	6.00	7.50	8.10	9.00	10.73	12.00	14.25	....	.....
21	.....	6.25	8.00	8.90	9.60	11.25	12.98	15.60	.....	.....
22	.....	6.50	8.55	9.50	10.28	12.00	14.10	16.80	.....	.....
23	.....	7.00	8.70	9.90	10.58	12.60	14.75	18.00	.....	.....
24	.....	7.50	8.90	10.00	10.95	13.20	15.68	19.05	.....	.....
26	.....	.....	* 9.55	.....	*11.95	*14.40	17.10	21.30	$26.25	$31.20
28	.....	.....	*10.80	.....	*12.90	*15.45	18.15	22.90	28.50	34.50
30	.....	.....	*12.00	.....	*14.10	*17.25	19.90	24.75	31.50	38.10
32	.....	.....	13.20	.....	15.45	19.35	22.50	26.86	34.15	41.65
34	.....	.....	14.40	.....	17.25	21.75	25.50	30.00	36.75	45.00
36	.....	.....	15.90	.....	19.50	24.00	28.65	33.75	39.75	48.60
38	.....	.....	19.50	.....	21.75	26.40	31.05	37.15	42.75	51.75
40	.....	.....	21.00	.....	24.00	28.50	33.75	40.15	46.50	55.15
42	.....	.....	23.25	.....	26.25	32.25	37.50	43.50	50.25	57.75
44	.....	.....	.....	.....	30.20	37.10	43.13	50.00	57.80	66.40
46	.....	.....	.....	.....	34.70	42.63	49.60	57.50	66.35	76.35
48	.....	.....	.....	.....	39.91	49.00	57.05	66.15	76.29	87.80

* Note—Sizes marked with star will be subject to extra charge if made with bores larger than 3 7/16"

TABLE OF HUBS AND BORES

Diameter	FACES									
	2"	3"	4"	5"	6"	8"	10"	12"	14"	16"
6	1 1/16" Bore 3 1/2" Hub			1 1/16" Bore 4 1/2" Hub						
7	1 1/16" or 2 7/16" Bore 3 1/2" Hub			2 7/16" Bore 4 1/2" Hub						
8		2 7/16" Bore 3 1/2" Hub or 2 15/16" Bore 4 1/2" Hub		2 7/16" Bore 4 1/2" Hub or 2 15/16" Bore 4 1/2" Hub		2 15/16" Bore 4 1/2" Hub				
9	2 7/16" Bore 3 1/2" Hub									
10		2 7/16" Bore 3 1/2" Hub or 2 15/16" and 3 7/16" Bore 4 1/2" Hub		2 7/16" Bore 4 1/2" Hub or 2 15/16" and 3 7/16" Bore 5 1/2" Hub		2 15/16" or 3 7/16" Bore 5 1/2" Hub				
11										
12										
13										
14										
15—16										
17		2 7/16", 2 15/16" or 3 7/16" Bore 4 1/2" Hub		2 15/16" or 3 7/16" Bore 5 1/2" Hub						
18										
19—20										
21		2 15/16" or 3 7/16" Bore 4 1/2" Hub					3 7/16" Bore 5 1/2" Hub			
22										
23—24										
26			3 7/16" Bore, 5 1/2" Hub or 4 7/16" Bore 6 1/2" Hub							
28										
30										
32						4 7/16" Bore 6 1/2" Hub				
34—36										
38										
40—42										
44		Not Made			4 7/16" Bore 8 1/2" Hub	4 7/16" Bore 8 1/2" Hub				
46										
48										

IRON PULLEYS

SINGLE ARM FOR SINGLE BELT—MACHINE MOULDED

Bored, turned and balanced, with set screws or key seats.
Note.— Heavy line indicates Limit, beyond which we do not make crown face pulleys without extra charge.

Diameter in inches	Face in Inches												
	3	4	5	6	7	8	9	10	11	12	14	16	18
6	$1.95	$2.10	$2.30	$2.55	$2.80	$3.05	$3.30	.....	.....	.....	.....	.....	.....
7	2.10	2.25	2.50	2.75	3.00	3.25	3.55	3.85	.....	.....	.....	.....	.....
8	2.25	2.45	2.70	2.95	3.20	3.45	3.80	4.15	.....	.....	.....	.....	.....
9	2.40	2.60	2.85	3.15	3.45	3.75	4.10	4.45	.....	.....	.....	.....	.....
10	2.55	2.75	3.05	3.40	3.70	4.05	4.40	4.75	$5.10	.....	.....	.....	.....
11	2.70	2.95	3.25	3.60	3.95	4.35	4.65	5.05	5.40	.....	.....	.....	.....
12	2.85	3.15	3.50	3.85	4.20	4.55	4.95	5.35	5.75	$6.20	.....	.....	.....
13	3.05	3.35	3.70	4.10	4.45	4.90	5.25	5.70	6.15	6.60	.....	.....	.....
14	3.25	3.55	3.90	4.35	4.70	5.20	5.60	6.10	6.55	7.05	$8.25	.....	.....
15	3.40	3.75	4.15	4.60	5.05	5.50	5.95	6.45	6.95	7.50	8.75	.....	.....
16	3.60	3.95	4.40	4.90	5.35	5.85	6.30	6.85	7.40	8.00	9.40	$10.90	.....
17	3.80	4.20	4.70	5.20	5.70	6.20	6.75	7.30	7.90	8.50	10.05	11.70	.....
18	4.00	4.45	4.95	5.50	6.05	6.60	7.15	7.75	8.40	9.10	10.80	12.60	.....
19	4.25	4.70	5.25	5.85	6.45	7.05	7.65	8.30	9.00	9.75	11.60	13.55	.....
20	4.45	4.95	5.55	6.20	6.85	7.50	8.15	8.85	9.60	10.40	12.40	14.50	$16.60
21	4.70	5.25	5.85	6.55	7.25	7.95	8.65	9.40	10.20	11.05	13.20	15.45	17.60
22	4.90	5.55	6.15	6.90	7.65	8.40	9.15	9.95	10.80	11.70	14.05	16.40	18.75
23	5.15	5.80	6.50	7.25	8.05	8.85	9.65	10.50	11.45	12.40	14.85	17.35	19.85
24	5.40	6.10	6.85	7.65	8.45	9.30	10.20	11.10	12.10	13.15	15.70	18.30	21.00
25	5.70	6.50	7.25	8.10	8.95	9.90	10.85	11.85	12.90	14.05	16.65	19.35	22.15
26	6.00	6.90	7.65	8.60	9.45	10.55	11.50	12.60	13.75	15.00	17.65	20.40	23.30
27	6.35	7.30	8.15	9.05	10.00	11.10	12.20	13.35	14.60	15.90	18.60	21.45	24.50
28	6.75	7.70	8.50	9.50	10.60	11.70	12.90	14.10	15.45	16.85	19.55	22.50	25.65
29	7.25	8.10	9.00	10.00	11.15	12.35	13.60	14.90	16.30	17.70	20.55	23.60	26.80
30	7.60	8.55	9.45	10.55	11.75	13.00	14.30	15.75	17.15	18.60	21.55	24.70	28.00
31	8.05	8.95	9.95	11.10	12.35	13.70	15.10	16.55	18.05	19.55	22.60	25.85	29.25
32	8.45	9.40	10.45	11.65	12.95	14.40	15.90	17.40	19.00	20.55	23.70	27.05	30.55
33	8.90	9.90	11.00	12.25	13.60	15.05	16.70	18.25	19.90	21.50	24.80	28.25	31.80
34	9.40	10.40	11.50	12.90	14.35	15.85	17.55	19.10	20.85	22.50	25.90	29.45	33.10
35	9.90	10.90	12.10	13.50	15.00	16.60	18.25	19.95	21.75	23.50	27.00	30.65	34.40
36	10.40	11.40	12.65	14.10	15.70	17.35	19.10	20.85	22.70	24.50	28.10	31.85	35.70
38	.....	12.55	13.95	15.60	17.95	19.05	20.90	22.80	24.75	26.65	30.50	34.45	38.50
40	.....	13.70	15.30	17.10	18.90	20.80	22.75	24.75	26.80	28.80	32.90	37.10	41.35
42	.....	14.90	16.70	18.60	20.55	22.55	24.60	26.70	28.85	31.00	35.30	39.70	44.20
44	.....	16.25	18.20	20.25	22.30	24.45	26.60	28.80	31.10	33.40	37.90	42.70	47.55
46	.....	17.65	19.70	21.85	24.05	26.35	28.60	30.95	33.40	35.80	40.60	45.70	50.90
48	.....	19.00	21.20	23.50	25.85	28.25	30.65	33.15	35.70	38.20	43.30	48.70	54.20
50	.....	.....	22.80	25.30	27.75	30.25	32.80	35.45	38.10	40.80	46.20	52.00	57.95
52	.....	.....	24.50	27.10	29.65	32.30	35.00	37.75	40.50	43.40	49.20	55.30	61.75
54	.....	.....	26.20	28.90	31.65	34.40	37.20	40.05	43.00	46.00	52.20	58.70	65.50
56	.....	.....	.....	30.85	33.55	36.30	39.25	42.25	45.45	48.75	55.40	62.30	69.50
58	.....	.....	.....	32.80	35.50	38.35	41.35	44.55	47.95	51.50	58.60	65.90	73.50
60	.....	.....	.....	34.80	37.59	40.35	43.45	46.85	50.45	54.20	61.80	69.60	77.50
	3	4	5	6	7	8	9	10	11	12	14	16	18

Intermediate widths of Face at next higher price, Intermediate Diameters at extra prices.
For Split, Tight and Loose, and Flanged Pulleys, see additional prices on page 400.

IRON PULLEYS

SINGLE ARM FOR DOUBLE BELT — Machine Moulded

Bored, turned and balanced with set screws or key seats.
Note.— These pulleys are made either straight or crown face in sizes here given.

Diameter in inches	Face in Inches													
	5	6	7	8	9	10	11	12	14	16	18	20	22	24
10	$4.10	$4.55	$5.00	$5.50	$6.00	$6.55	$7.10	$7.65	.....	.....	.....	.....	.....	.....
12	4.70	5.25	5.80	6.35	6.95	7.55	8.15	8.75	$10.10	.....	.....	.....	.....	.....
14	5.30	5.95	6.55	7.20	7.90	8.60	9.30	10.00	11.60	.....	.....	.....	.....	.....
16	6.00	6.70	7.45	8.20	9.00	9.90	10.60	11.45	13.25	$15.15	.....	.....	.....	.....
18	6.75	7.60	8.45	9.30	10.20	11.10	12.05	13.05	15.10	17.20	.....	.....	.....	.....
20	7.55	8.60	9.60	10.60	11.70	12.80	13.90	15.00	17.40	19.80	$22.40	.....	.....	.....
22	8.45	9.60	10.80	12.00	13.20	14.50	15.75	17.00	19.70	22.40	25.40	.....	.....	.....
24	9.35	10.65	12.00	13.40	14.80	16.20	17.65	19.00	22.00	25.10	28.40	.....	.....	.....
26	10.45	11.90	13.40	14.90	16.40	18.00	19.60	21.10	24.55	28.70	31.80	$35.55	.....	.....
28	11.55	13.15	14.80	16.40	18.05	19.80	21.60	23.30	27.10	31.10	35.25	39.45	$43.75	.....
30	12.70	14.55	16.20	18.00	19.80	21.60	23.50	25.50	29.70	34.20	38.70	43.25	47.80	.....
32	14.10	16.05	17.90	19.85	22.20	23.85	25.90	28.00	32.65	37.45	42.30	47.45	52.00	.....
34	15.50	17.60	19.70	21.75	23.85	26.10	28.30	30.50	35.60	40.70	45.90	51.65	56.20	.....
36	16.95	19.20	21.45	23.70	26.00	28.30	30.70	33.10	38.55	44.00	49.50	55.90	60.40	$65.80
38	17.15	21.05	23.45	25.90	28.35	30.80	33.35	35.95	41.65	49.15	53.50	59.80	65.05	70.85
40	19.60	22.90	25.45	28.10	30.70	33.30	36.05	38.75	44.80	52.65	57.50	63.70	69.70	75.90
42	22.05	24.80	27.55	30.30	33.05	35.85	38.75	41.60	47.95	54.40	61.00	67.60	74.30	81.00
44	23.90	26.85	29.75	32.70	35.65	38.65	41.80	44.90	51.60	58.50	65.50	72.50	79.50	86.65
46	25.80	28.90	32.00	35.15	38.35	41.55	44.90	48.20	55.30	62.60	70.00	77.40	84.80	92.30
48	27.70	31.00	34.30	37.65	41.05	44.45	48.00	51.50	59.00	66.70	74.50	82.30	90.10	98.00
50	29.75	33.30	36.80	40.30	43.85	47.45	51.15	54.80	62.70	70.85	79.15	87.40	95.70	104.10
52	31.85	35.65	39.30	43.00	46.75	50.50	54.35	58.15	66.45	75.05	83.80	92.50	101.30	110.30
54	33.95	37.90	41.80	45.70	49.65	53.60	57.55	61.50	70.25	79.25	88.50	97.70	107.00	116.50
56	.....	40.65	44.50	48.50	52.55	56.60	60.75	65.00	74.35	83.55	93.50	103.25	113.10	123.15
58	.....	43.25	47.20	51.30	55.45	59.65	64.00	68.50	78.45	87.85	98.50	108.85	119.25	129.80
60	.....	46.00	50.00	54.10	58.35	62.75	67.30	72.00	82.55	92.15	103.50	114.45	125.45	136.50
62	.....	48.30	52.65	57.10	61.65	66.30	71.10	76.00	86.95	97.25	108.70	120.35	131.85	143.20
64	.....	50.60	55.35	60.10	64.95	69.90	74.90	80.00	91.35	102.35	113.85	126.25	138.30	150.90
66	.....	53.00	58.05	63.15	68.30	73.50	78.75	84.00	95.75	107.55	119.50	132.15	144.80	157.50
68	.....	55.70	60.95	66.25	71.60	77.10	82.55	88.20	100.25	112.55	125.10	138.35	151.50	165.00
70	.....	58.40	63.85	69.25	75.00	80.70	86.40	92.40	104.85	117.65	130.80	144.55	158.25	172.50
72	.....	61.00	66.75	72.55	78.40	84.30	90.30	96.50	109.45	122.75	136.50	150.60	165.00	179.50
74	.....	.....	.....	75.75	81.90	88.50	94.80	101.00	114.45	128.25	142.50	157.10	172.00	187.30
76	.....	.....	.....	79.05	85.50	92.70	99.30	105.50	119.45	133.75	148.45	163.70	179.00	194.50
78	.....	.....	.....	82.35	89.10	95.90	102.85	110.00	124.50	139.25	154.50	170.30	186.10	202.00
80	.....	.....	.....	85.95	92.90	99.85	106.95	114.30	129.50	144.95	160.80	177.10	193.40	210.00
82	.....	.....	.....	89.55	96.70	103.85	111.15	118.65	134.50	150.65	167.10	183.90	200.70	218.00
84	.....	.....	.....	93.25	100.50	107.85	115.35	123.00	139.60	156.40	173.50	190.75	208.10	225.50
90	.....	.....	.....	.....	.....	121.00	129.40	138.00	155.60	173.40	191.50	210.70	230.05	249.50
96	.....	.....	.....	.....	.....	134.75	143.85	153.00	172.10	191.75	212.50	233.00	254.50	276.00
102	.....	.....	.....	.....	.....	150.75	160.85	171.00	192.00	213.40	233.50	256.25	279.05	302.00
108	.....	.....	.....	.....	.....	165.35	176.10	187.00	209.50	232.50	256.00	280.20	304.55	329.00
114	.....	.....	.....	.....	.....	182.10	193.50	205.00	228.40	252.45	277.00	303.00	329.50	356.00
120	.....	.....	.....	.....	.....	196.55	208.65	221.00	246.10	271.75	298.00	325.90	353.80	382.50
	5	6	7	8	9	10	11	12	14	16	18	20	22	24

Intermediate widths of Face at next higher price. Intermediate Diameters at extra prices.
Prices on Double Arm and Extra Heavy Pulleys quoted on application.
For Split, Tight and Loose, and Flanged Pulleys, see additional prices on page 404.

IRON PULLEYS

ADDITIONAL PRICE LIST

To be added to Price Lists of Plain Pulleys given on previous pages.

FOR FINISHED SPLIT PULLEYS ADD THE FOLLOWING PRICES TO LIST PRICES OF PLAIN PULLEYS						FOR TIGHT AND LOOSE PULLEYS PER PAIR, OR FOR FLANGED PULLEYS EACH, ADD THE FOLLOWING PRICES TO LIST PRICES OF PLAIN PULLEYS		
Diam. in Inches	Face in Inches	Price	Diam. in Inches	Face in Inches	Price	Diam. in Inches	Additional Price for One Pair Tight and Loose Pulleys	Additional Price for One Pair with Two Flanges
8 to 10	3 to 6	$1.75	38 to 46	4 to 6	$7.50	6 to 8	$1.60	$4.65
	7 " 10	2.15		7 " 10	9.90	9 " 10	1.95	5.20
	11 " 12	3.10		11 " 14	13.50	11 " 12	2.30	5.75
11 " 18	3 " 6	2.20		15 " 20	18.00	13 " 14	2.65	6.30
	7 " 10	2.85		21 " 24	24.00	15 " 16	3.00	7.15
	11 " 16	4.00	48 " 60	4 " 6	10.00	17 " 18	3.30	8.00
19 " 23	3 " 4	2.65		7 " 10	13.00	19 " 20	3.70	8.80
	5 " 6	3.40		11 " 14	18.00	21 " 22	4.05	9.90
	7 " 10	4.05		15 " 20	25.00	23 " 24	4.40	11.00
	11 " 14	5.60		21 " 30	34.50	25 " 26	4.75	12.10
	15 " 18	7.30	62 " 84	6 " 10	20.00	27 " 28	5.10	13.75
24 " 30	3 " 4	3.60		11 " 14	26.00	29 " 30	5.45	15.40
	5 " 6	4.40		15 " 20	35.00	31 " 32	5.80	17.05
	7 " 10	5.40		21 " 30	48.00	33 " 34	6.15	18.70
	11 " 14	7.25	90 " 120	10 " 14	38.00	35 " 36	6.50	20.35
	15 " 22	10.00		15 " 20	53.50	38 " 40	7.20	23.10
31 " 36	3 " 4	4.50		21 " 30	70.00	42 " 44	7.90	26.40
	5 " 6	5.60				46 " 48	8.60	29.70
	7 " 10	6.75				50 " 52	9.30	33.00
	11 " 14	9.80				54 " 56	10.00	36.30
	15 " 20	13.00				58 " 60	10.70	40.70
	21 " 24	16.00				62 " 66	11.70	46.20
						68 " 72	12.70	51.70
						74 " 78	13.70	57.20
						80 " 84	14.70	62.70

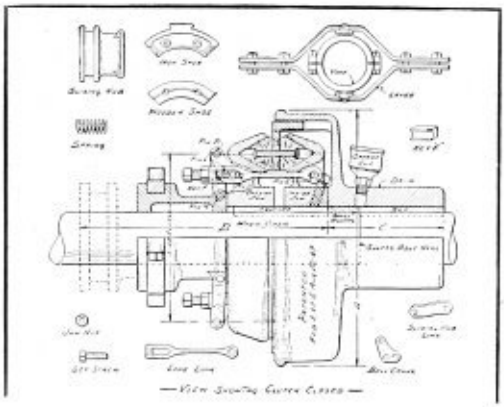
Pulleys with one flange only, one-half that given above.

Pulleys with three flanges, one-half more than given above.

MASTER FRICTION CLUTCH

Every Clutch Guaranteed to Transmit the Power Specified

Will transmit from 50 to 300 per cent more power than any other Friction Clutch on the market. This is due to the fact that the friction surfaces are V shaped, that the friction comes on both sides of the shoes or blocks, and that the friction bearing forms a complete circuit. This combination produces a maximum of resistance, consequently a maximum of power.



THE GUARANTEED MASTER FRICTION CLUTCH AND PARTS

Guaranteed to Transmit the Power Specified

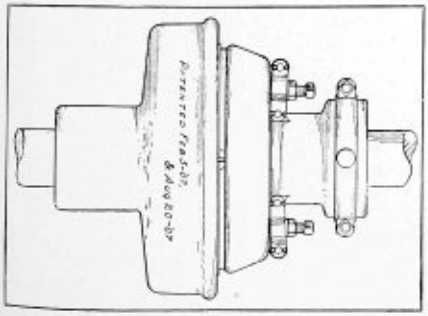
Size Clutch inches	Each	H. P. at 100 R. P. M.	Largest Bore inches	Equal to Shaft inches	Outside Diameter A inches	Space on Shaft for Clutch Coupling			
						B inches	C inches	Length Brass Bushing inches	Total Space inches
4½	$30.00	3	1 7/16	1 3/16	7½	9½	3¼	1	12¾
6	54.00	8	2 7/16	1 11/16	9½	10½	4	1⅛	14½
8	81.00	18	3 7/16	2 3/16	12¼	11 7/8	4¾	1¼	16⅝
10	123.00	30	4 7/16	2 11/16	14¾	13	5½	1⅜	18½
13	177.00	50	6	3 3/16	18⅜	14	6¼	1½	20¼
16	244.00	85	7½	3 11/16	22	14¾	7	1⅝	21¾
20	320.00	135	7½	4 7/16	26¾	15¼	7¾	1¾	23
24	416.00	200	10	4 15/16	31¼	17¾	8½	1⅞	26¼

For Split Clutches add 20 per cent to list.

The limit of horse power is, as proven by actual test, 50% higher than horse power shown in table.

When replacing worn-out wooden Friction Shoes or Blocks, take out Pin "C" in each link and slide outside jaw back. Key "F" must be back of Pin "C" when connecting up again, as shown. When ordering parts specify name of part and the size Clutch.

HOW TO SPECIFY INQUIRIES AND ORDERS



1st. Give us the horse power you wish to transmit.

2d. Give us the diameter and speed of shaft

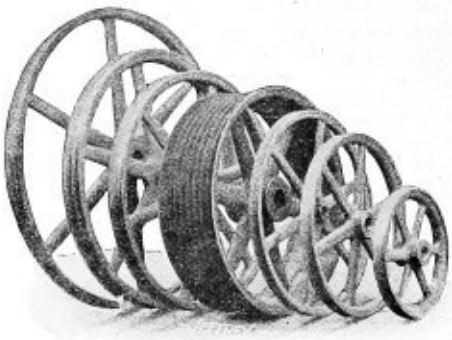
3d. State whether Clutch is to be used with pulley or as coupling.

4th. If used with pulley, give diameter and face of pulley; also whether single or double belt.

5th. If used as a coupling, specify whether clutch is to remain idle much of the time while one of the shafts continues to run. If so, clutch must have longer brass bushing than that shown in table.

6th. Give clear space allowable on the shaft.

IRON SHEAVES FOR MANILA ROPE TRANSMISSION



FOR ¾, ⅞ AND 1 INCH ROPE

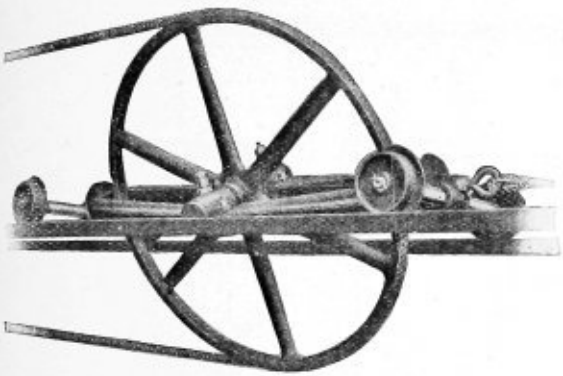
Diameter Inches	Number of Grooves									
	1	2	3	4	5	6	7	8	9	10
12	$9.30	$12.90	$15.12	$21.84	$25.56	$28.98	$32.40	$36.24	$40.50	$45.84
14	9.66	13.50	17.69	22.66	26.52	30.06	33.60	37.56	41.94	47.40
16	10.38	14.40	20.82	23.82	27.78	31.44	35.10	39.18	43.68	49.26
18	11.76	15.66	21.00	27.12	32.40	37.08	41.40	45.36	50.58	56.40
20	12.72	17.52	26.64	30.66	36.78	42.30	47.46	52.26	58.32	64.98
22	13.20	18.84	27.30	35.61	41.52	47.28	53.70	59.40	66.36	71.82
24	14.82	20.76	29.46	37.56	44.16	50.16	56.82	62.76	69.96	75.66
26	15.90	22.68	31.92	41.16	48.60	55.44	63.36	69.72	77.76	84.30
28	16.56	23.50	32.94	42.36	49.98	57.00	65.10	71.64	79.86	86.60
30	18.24	25.56	34.26	43.86	51.66	58.86	67.24	73.86	82.26	89.16
32	20.88	29.58	38.26	48.24	58.02	64.20	72.54	80.16	89.04	97.92
34	22.62	30.60	39.96	49.62	59.58	65.94	74.46	82.26	91.32	100.38
36	23.04	31.50	41.34	51.48	61.92	68.76	77.76	86.04	95.58	105.12
40	26.52	35.64	46.86	57.48	70.50	85.32	96.24	103.44	111.18	119.40
44	29.16	38.69	49.98	61.20	74.58	89.76	100.86	108.60	116.70	125.28
48	33.72	46.08	54.18	70.98	85.08	99.00	110.11	120.00	128.28	137.28
52	41.70	54.54	68.16	79.68	93.90	107.94	119.28	129.18	137.58	146.70
56	44.10	57.60	71.58	83.46	98.04	112.44	124.14	134.40	143.16	152.64
60	50.10	63.66	76.08	98.10	111.12	128.04	144.48	155.22	172.02	185.82
64	55.08	67.38	87.78	102.78	115.98	133.68	150.60	161.82	179.10	193.38
68	64.92	77.46	98.10	113.34	127.08	144.72	161.88	173.34	190.86	205.38
72	74.46	87.18	104.70	121.02	135.84	154.56	172.80	185.34	203.94	219.54
76	77.64	91.00	118.08	132.30	149.52	170.64	189.66	205.68	220.50	237.12
80	83.58	103.88	121.98	136.68	154.38	175.98	195.48	211.98	227.28	244.38
84	90.42	111.24	130.86	146.58	165.30	187.92	208.44	225.96	242.28	260.40
88	94.62	118.50	140.88	159.66	180.00	203.94	225.00	244.86	262.56	279.54
92	113.40	133.33	156.24	175.56	196.68	220.92	242.52	262.92	281.16	298.68
Split Hub 96	118.26	139.00	162.66	228.45	255.82	287.10	315.07	341.55	365.33	383.20
Split Hub 102	135.36	164.34	236.02	262.88	297.22	335.70	368.92	400.50	427.50	472.10
Split Hub 108	151.02	176.40	252.22	280.20	315.67	355.28	389.62	422.33	450.45	476.18
Split Hub 114	171.18	196.68	281.85	312.98	347.85	389.85	442.66	475.98	506.48	533.12
Split Hub 120	189.00	216.48	308.32	349.05	391.65	438.00	481.72	520.20	566.18	604.62

All sheaves larger than 96 inches, 3 groove, are made with clamp hubs. This insures perfect sheaves, free from all internal strains. For list price on split sheaves add 30 per cent. Larger and special sizes, prices on application.

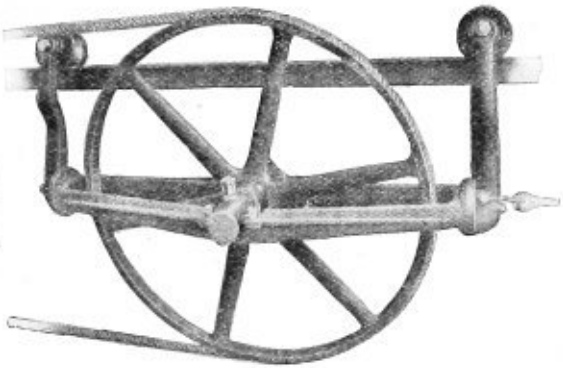
For Wire Rope Transmission Sheaves, see page 55.

TENSION CARRIAGES FOR ROPE TRANSMISSION

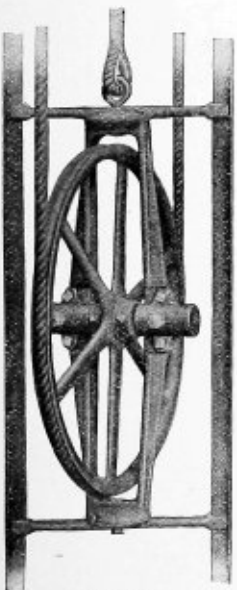
All Carriage-Wheel Bearings are provided with Compression Grease Cups



Style M—Adjustable, for Horizontal Drives



Style G—Adjustable, Used to Advantage when a Horizontal Drive is Located Along the Wall of a Building—Single Track



Style I
Adjustable, for Vertical Drives

Diameter of Wheels	Style of Carriage					
	H	M	L	G	I	J
	Price	Price	Price	Price	Price	Price
24	$16.00	$24.00	$16.00	$18.00	$14.00	$13.25
30	24.00	35.00	24.00	26.00	21.00	14.50
36	33.00	48.00	33.00	36.00	30.00	17.00
42	44.00	54.00	44.00	47.00	40.00	18.30
48	60.00	73.00	60.00	64.00	55.00	19.60
54	75.00	96.00	75.00	80.00	68.00	Use Style I
60	94.00	125.00	94.00	100.00	85.00	
66	120.00	158.00	120.00	126.00	110.00	
72	150.00	195.00	150.00	157.00	140.00	
84	188.00	235.00	188.00	195.00	176.00	
96	232.00	280.00	232.00	240.00	220.00	

Style J
Used for Small Drives

T-iron guides are used with these carriages.
In most cases where this carriage is used, the weights should be arranged as a counter-balance.

POLISHED COLD ROLLED SHAFTING

MADE TO WHITWORTH STANDARD GAUGE AND ACCURATELY STRAIGHTENED

Diameter inches	Weight per ft.	Price per lb.	Diameter inches	Weight per ft.	Price per lb.	Diam. inches	Weight per ft.	Price per lb.	Diam. inches	Weight per ft.	Price per lb.
6	96.14	8c.	3	24.05		1 9/16	6.52		53/64	1.90	
5 5/16	94.14	7½c.	2 15/16	23.06		1 1/2	6.01	5c.	13/16	1.77	
5 1/2	80.77		2 7/8	22.09		1 31/32	5.60		51/64	1.68	5½c.
5 7/16	78.95	7c.	2 13/16	21.15		1 7/16	5.52		25/32	1.59	
5	67.45		2 3/4	20.21		1 13/32	5.26		3/4	1.50	
4 15/16	65.50		2 11/16	19.31		1 3/8	5.05		47/64	1.43	
4 3/4	60.88	6½c.	2 5/8	18.41		1 5/16	4.61		23/32	1.38	
4 1/2	54.11		2 9/16	17.55		1 9/32	4.40		11/16	1.26	
4 7/16	52.62		2 1/2	16.70		1 1/4	4.17		45/64	1.22	
4 1/4	48.26	6c.	2 7/16	15.89		1 7/32	4.02		11/32	1.17	6c.
4 3/16	46.65		2 3/8	15.07		1 1/8	3.86		43/64	1.11	
4	42.75		2 5/16	14.35	5c.	1 3/16	3.77		5/8	1.05	
3 15/16	41.04		2 1/4	13.52		1 5/32	3.58		19/32	1.00	
3 7/8	39.40		2 3/16	12.80		1 1/8	3.38	5½c.	9/16	.845	
3 3/4	37.57		2 1/8	12.07		1 3/32	3.20		17/32	.757	
3 11/16	36.40	5½c.	2 1/16	11.35		1 5/64	3.11		1/2	.667	
3 5/8	35.20		2	10.69		1 1/16	3.02		15/32	.586	7c.
3 9/16	34.00		1 15/16	10.03		1 1/32	2.85		7/16	.511	
3 1/2	32.73		1 7/8	9.39		1	2.68		13/32	.450	
3 7/16	31.58		1 27/32	9.10		31/32	2.52		3/8	.375	
3 3/8	30.43		1 13/16	8.78		15/16	2.35		11/32	.320	8½c.
3 1/4	28.22	5¼c.	1 3/4	8.18		59/64	2.27		5/16	.260	
3 3/16	27.16		1 11/16	7.61		29/32	2.20		1/4	.167	
3 1/8	26.09		1 5/8	7.06		7/8	2.05		7/32	.130	10c.
						57/64	1.94		3/16	.095	

EXTRAS FOR SHORT AND LONG LENGTHS

The above prices are for Shafts from 1 foot to 24 feet long, inclusive.

One half cent per pound net extra for Pump and Piston Rods.

For Shafts 6 inches to 11¾ inches long, net extra..... per lb., ½c.

" " 3 " " 5¾ " " " " ..... " 1 c.

" " shorter than 3 inches special prices will be quoted.

Shafts over 24 feet long and less than 30, net extra..... per lb., ½c.

Shafts 30 feet long and less than 35, net extra,..... " 1c.

" 35 " " " " " 40, " " ..... " 1½c.

" 40 " " " " " 45, " " ..... " 2c.

" 45 " " " over, " " " ..... " 2½c.

COLD ROLLED STEEL SQUARES

For Keys, Splines, and Square Shafts

Square inches	Weight per ft.	Price per lb.	Square inches	Weight per ft.	Price per lb.	Square inches	Weight per ft.	Price per lb.
4	54.42	11c.	1 1/2	7.66		5/8	1.34	10c.
3 3/4	47.84		1 3/8	6.43		9/16	1.08	
3 1/2	41.67	10c.	1 1/4	5.31		1/2	.850	
3 1/4	35.92		1 1/8	4.30		7/16	.652	
3	30.61		1 1/16	3.85	8c.	3/8	.479	
2 3/4	25.72		1	3.40		11/32	.405	
2 1/2	21.26		15/16	2.99		5/16	.332	12c.
2 1/4	17.25	8c.	7/8	2.60		9/32	.270	
2	13.60		13/16	2.25		1/4	.213	
1 3/4	10.41		3/4	1.92		7/32	.165	
1 5/8	8.98		11/16	1.61	10c.	....	....	

The above prices are for Shafts from 2 feet to 24 feet long inclusive.

NET EXTRAS FOR CUTTING SHORT LENGTHS

For Shafts 11 15/16 to 23 3/4 inches long, net extra, per lb., 1/2c.

For Shafts 6 inches to 11 3/4 inches long, net extra, per lb., 1c.

For Shafts 3 inches to 5 3/4 inches long, net extra, per lb., 2c.

For Shafts shorter than 3 inches or longer than 24 feet a special price will be quoted upon application.

COLD ROLLED STEEL FLATS

For Finger Bars, Knife Backs, Keys, Engine Guides, Elevator Slides, etc.

PRICES PER POUND

Thickness, inches	Widths, Inches									
	5/16 to 1/2	7/16 to 33/32	3/4 to 1	1 1/16 to 1 1/2	1 3/16 to 1 3/4	1 13/16 to 2	2 1/16 to 2 1/4	2 5/16 to 2 1/2	2 5/16 to 2 3/4	2 13/16 to 3
1/4 and 5/16	$0.14	.14	.10	.10	.08	.08	...	...	...	...
3/8 " 7/16	.14	.14	.10	.10	.08	.08	...	...	...	...
1/2 " 9/16	.....	.10	.08	.08	.08	.08	.08	.08	.08	.08
5/8 " 11/16	.....	.10	.08	.08	.08	.08	.08	.08	.08	.08
3/4 to 15/16	.....	...	.08	.08	.08	.08	.08	.08	.08	.08
1 " 1 1/16	.....	...	...	.08	.08	.08	.08	.08	.08	.08
1 1/2 " 1 11/16	.....	...	...	...	.08	.08	.08	.08	.08	.08
1 3/4 " 1 15/16	.....	...	...	...	...	.08	.08	.08	.08	.08
2 " 2 1/16	.....	...	...	...	...	...	.08	.08	.08	.08
2 1/4 " 2 7/16	.....	...	...	...	...	...	...	.08	.08	.08
2 1/2 " 2 11/16	.....	...	...	...	...	...	...	...	.08	.08
2 3/4 " 2 15/16	.....	...	...	...	...	...	...	...	...	.08

The above prices are for bars not over 24 feet long and not less than 2 feet long.

EXTRA FOR SHORT LENGTHS

For shaft 12 to 23 3/4 inches, net extra, per lb., 1/2c.

For shaft 6 to 11 3/4 inches, net extra, per lb., 1c.

For shaft 3 to 5 3/4 inches, net extra, per lb., 2c.

For shaft shorter than 3 inches or longer than 24 feet special prices will be quoted.

PRICE LIST FOR KEY-SEATING SHAFTS

Diameter of Shaft inches	Full Length per foot	For Couplings per End Milled Ends	Middle Splines			
			First Foot or Less Milled Ends	Second Foot and Over per foot	Extra for each Drilled End	Extra for each Squared End
1 —1 1/8	$0.16	$0.24	$0.50	$0.16	$0.20	$0.30
1 3/16—1 3/8	.20	.30	.60	.20	.30	.40
1 7/16—1 3/4	.24	.40	.70	.24	.40	.50
1 15/16—2 1/8	.30	.50	.80	.30	.50	.60
2 3/16—2 3/4	.40	.60	.90	.40	.60	.70
2 15/16—3 3/8	.50	.80	1.10	.50	.70	.80
3 7/16—3 7/8	.60	1.00	1.30	.60	.80	1.00
3 15/16—4 1/4	.70	1.20	1.50	.70	.90	1.20
4 5/16—4 3/4	.90	1.40	1.70	.90	1.00	1.30
4 15/16—5 1/4	1.20	1.70	2.20	1.20	1.10	1.50
5 5/16—5 3/4	1.50	2.00	2.50	1.50	1.30	1.70
5 15/16—6	2.00	2.50	3.00	2.00	1.50	2.00

Intermediate size, same price.

COUPLINGS AND COLLARS

SOLID SLEEVE COUPLINGS

For Light Shafting

Have countersunk set screws, and are finished over entire surface.

Size	Price, Each
15/16	$3.00
1 3/16	3.50
1 5/16	3.75
1 7/16	4.00
1 11/16	4.50
1 15/16	5.50

RIBBED COMPRESSION COUPLINGS

All compression couplings furnished complete with keys and socket wrenches when required.

Couplings furnished with keys and bolts and fitted for shafts.

A low priced and desirable coupling.

Size of Shaft	Each	Size of Shaft	Each
1 3/16	$3 .05	2 5/16	$13.00
1 7/16	4.20	3 3/16	16.50
1 11/16	6.30	3 7/16	20.00
1 15/16	7.40	3 11/16	24.00
2 3/16	9.00	3 15/16	28.00
2 7/16	10.00	4 7/16	38.00
2 11/16	11.00	.....	.....

FLANGE COUPLINGS

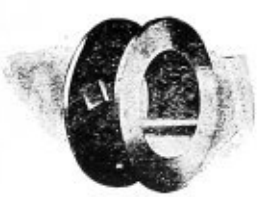
Flange

Key-seated keys and bolts furnished. Made male or female outside of bolts. Quick and easy to align. All couplings faced off in lathe after keys are driven.

Size of Shaft	Price, per Pair not Fitted	Price for Fitting
1 7/16	$8.00	$2.50
1 11/16	8.50	2.60
1 15/16	9.00	2.75
2 3/16	10.50	2.90
2 7/16	12.50	3.10
2 11/16	15.25	3.25
2 15/16	18.25	3.50
3 3/16	21.75	4.00
3 7/16	25.25	4.50
3 11/16	29.25	5.00
3 15/16	33.25	6.00
4 7/16	43.25	8.00
4 15/16	54.75	10.00
5 1/2	67.00	11.00
6	81.00	12.00

SAFETY COLLARS

All Set Screws Are Below Surface, Insuring Safety

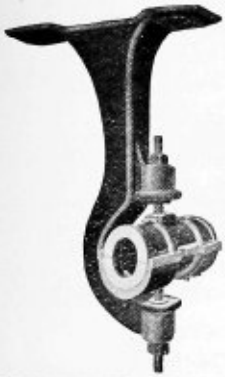


Solid

Shaft Size inches	Each	Shaft Size inches	Each
15/16	$0.65	4 15/16	$5.90
1 3/16	.80	5 3/16	6.55
1 7/16	1.00	5 7/16	7.20
1 11/16	1.20	5 11/16	7.90
1 15/16	1.40	5 15/16	8.60
2 3/16	1.60	6 3/16	9.35
2 7/16	1.80	6 7/16	10.10
2 11/16	2.10	6 11/16	10.90
2 15/16	2.40	6 15/16	11.70
3 3/16	2.70	7 1/2	14.05
3 7/16	3.00	8	16.20
3 11/16	3.30	8 1/2	18.45
3 15/16	3.60	9	20.70
4 3/16	4.15	9 1/2	23.10
4 7/16	4.70	10	25.75
4 11/16	5.30	....	....

Shaft Size inches	Each	Shaft Size inches	Each
15/16	$0.95	4 15/16	$8.85
1 3/16	1.20	5 3/16	9.80
1 7/16	1.50	5 7/16	10.80
1 11/16	1.80	5 11/16	11.85
1 15/16	2.10	5 15/16	12.90
2 3/16	2.40	6 3/16	14.05
2 7/16	2.70	6 7/16	15.15
2 11/16	3.15	6 11/16	16.35
2 15/16	3.60	6 15/16	17.55
3 3/16	4.05	7 1/2	21.10
3 7/16	4.50	8	24.25
3 11/16	4.95	8 1/2	27.65
3 15/16	5.40	9	31.05
4 3/16	6.25	9 1/2	34.70
4 7/16	7.05	10	38.65
4 11/16	7.95	....	....

Split



RING-OILING SINGLE BRACE DROP HANGERS AND FLOOR STANDS

BABBITTED BEARINGS

These hangers are similar in design to the single-brace wick-oiling except that the box is provided with ring-oiling device.

Diam. of Shaft	Length of Bearing	Drop	Price Each	Diam. of Shaft	Length of Bearing	Drop	Price Each
1 3/16	6	8	$2.90			16	89.05
		10	3.05			18	9.40
		12	3.20			20	9.75
		14	3.35			22	10.10
		16	3.50			24	10.45
		18	3.65			27	11.10
1 7/16	6	8	3.30			30	11.80
		10	3.50			36	13.15
		12	3.70	2 11/16	11	10	9.30
		14	3.90			12	9.70
		16	4.10			14	10.10
		18	4.30			16	10.50
		20	4.50			18	10.90
		22	4.70			20	11.30
		24	4.90			22	11.70
1 11/16	7	8	4.40			24	12.10
		10	4.60			27	12.75
		12	4.80			30	13.45
		14	5.00			36	14.80
		16	5.20	2 15/16	12	10	11.15
		16	5.40			12	11.55
		20	5.65			14	11.95
		22	5.90			16	12.35
		24	6.15			18	12.75
1 15/16	8	8	5.45			20	13.15
		10	5.75			22	13.55
		12	6.05			24	13.95
		14	6.35			27	14.70
		16	6.65			30	15.45
		18	6.95			36	16.95
1 15/16	8	20	7.25	3 3/16	13	12	13.65
		22	7.55			14	14.05
		24	7.85			16	14.45
		27	8.50			18	14.85
		30	9.20			20	15.25
		36	10.55			22	15.65
2 3/16	9	8	6.00			24	16.05
		10	6.30			27	16.80
		12	6.60			30	17.55
		14	6.90			36	19.05
		16	7.20				
		18	7.50	3 7/16	14	12	15.50
		20	7.80			14	16.00
		22	8.10			16	16.50
		24	8.40			18	17.00
		27	9.05			20	17.50
		30	9.75			22	18.00
		36	11.10			24	18.50
2 7/16	10	10	8.00			27	19.25
		12	8.35			30	20.00
		14	8.70			36	21.50

WICK-OILING SINGLE BRACE DROP HANGERS AND FLOOR STANDS

BABBITTED BEARINGS

These hangers are adjustable in all directions, vertical adjustment being obtained by means of the adjusting screws, and lateral adjustment by means of the slotted holes in the base of the hanger.

These hangers possess a very valuable feature in being provided with an elongated recess in the box, by which the bearing adjusts itself to the shaft when the hanger does not come perpendicular to the shaft.

They are self-oiling, the oil being conveyed to the shaft by means of wicking which passes from the reservoir along the shaft, thus feeding the oil the entire length of the bearing.

The supply of oil can be governed by the number of strands of wicking.

The boxes are faced off at the ends.

Diam. of Shaft	Length of Bearing	Drop	Each
1 3/16	6	8	$2.50
		10	2.65
		12	2.80
		14	2.95
		16	3.10
		18	3.25
1 7/16	6	8	2.90
		10	3.10
		12	3.30
		14	3.50
		16	3.70
		18	3.90
		20	4.10
		22	4.30
		24	4.50
1 11/16	7	8	3.60
		10	3.80
		12	4.00
		14	4.20
		16	4.40
		18	4.60
		20	4.85
		22	5.10
		24	5.35
1 15/16	8	8	4.55
		10	4.85
		12	5.15
		14	5.45
		16	5.75
		18	6.05
		20	6.35
		22	6.65
		24	6.95
		27	7.60
		30	8.30
		36	9.65
2 3/16	9	8	5.10
		10	5.40
		12	5.70
		14	6.00
		16	6.30
		18	6.60
		20	6.90
		22	7.20
		24	7.50
		27	8.15
		30	8.85
		36	10.20
2 7/16	10	10	6.90
		12	7.25
		14	7.60
2 7/16	10	16	$7.95
		18	8.30
		20	8.65
		22	9.00
		24	9.35
		27	10.00
		30	10.70
		36	12.05
2 11/16	11	10	8.05
		12	8.45
		14	8.85
		16	9.25
		18	9.65
		20	10.05
		22	10.45
		24	10.85
		27	11.50
		30	12.20
		36	13.55
2 15/16	12	10	9.35
		12	9.75
		14	10.15
		16	10.55
		18	10.96
		20	11.35
		22	11.75
		24	12.15
		27	12.90
		30	13.65
		36	15.15
3 3/16	12	12	11.60
		14	12.00
		16	12.40
		18	12.80
		20	13.20
		22	13.60
		24	14.00
		27	14.75
		30	15.50
		36	17.00
3 7/16	12½	12	13.30
		14	13.80
		16	14.30
		18	14.80
		20	15.30
		22	15.80
		24	16.30
		27	17.05
		30	17.80
		36	19.30

HANGERS AND JOURNAL BEARINGS

ADJUSTABLE BALL AND SOCKET HANGERS

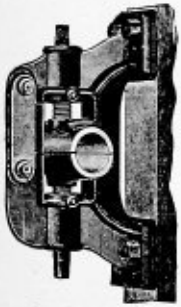
With Standard Bearings

Bases are all machine finished. By means of detachable double-brace links they can be more readily erected and placed in alignment, which facilitates the placing of shafting in position. This bearing is used with ball of waste saturated in oil, placed in grease cup, or with grease in compression cups.

Size of Shaft inches	Drop in Inches									
	8	10	12	14	16	18	20	24	30	36
7/8, 15/16, 1	$3.85	$4.00	$4.20	$4.45	.....	.....	.....	.....	.....	.....
1 1/8, 1 3/16, 1 1/4	3.95	4.10	4.30	4.55	.....	.....	.....	.....	.....	.....
1 7/16, 1 1/2	4.90	5.05	5.25	5.50	$5.60	$6.00	$6.45	.....	.....	.....
1 11/16, 1 3/4	5.00	5.15	5.35	5.60	5.70	6.10	6.55	.....	.....	.....
1 15/16, 2	6.85	7.35	7.50	7.80	8.05	8.30	8.80	$9.65	.....	.....
2 3/16, 2 1/4	8.70	9.05	9.20	9.70	10.30	10.75	11.65	13.35	$15.70	$18.25
2 7/16, 2 1/2	9.35	9.70	9.85	10.35	10.95	11.40	12.30	14.00	16.35	18.90
2 11/16, 2 3/4	10.85	11.35	11.85	12.35	13.35	14.45	15.50	17.75	19.80	20.55
2 15/16, 3	12.80	13.30	13.80	14.30	15.30	16.40	17.45	19.70	21.75	22.50
3 3/16, 3 1/4	.....	16.40	16.95	17.70	18.20	19.60	21.50	24.70	27.80	30.30
3 7/16, 3 1/2	.....	16.85	17.40	18.15	18.65	20.05	21.95	25.15	28.25	30.75
3 11/16, 3 3/4	.....	22.85	23.40	23.90	26.05	26.80	28.70	33.95	37.40	41.95
3 15/16, 4	.....	26.10	26.65	27.15	29.30	30.05	31.95	37.20	40.65	45.20
4 3/16, 4 1/4	.....	.....	.....	30.75	32.70	34.95	37.20	42.45	45.25	51.20
4 7/16, 4 1/2	.....	.....	.....	32.00	33.95	36.20	38.45	43.70	46.50	52.45
4 11/16, 4 3/4	.....	.....	.....	.....	39.35	43.05	45.30	48.90	53.10	61.20
4 15/16, 5	.....	.....	.....	.....	42.40	46.10	48.35	51.95	56.15	64.25

ADJUSTABLE BALL AND SOCKET POST HANGERS

With Standard Bearings



Double Brace

This Hanger is a combination of the standard frame, with the Standard hanger box, which is four diameters of shaft in length, babbitted, reamed and faced. With these boxes may be used either oil or grease. A wide range of adjustment is secured.

Size	Each	Size	Each	Size	Each	Size	Each
1 3/16	$4.50	2 3/16	$9.75	3 3/16	$19.00	4 3/16	$32.85
1 7/16	5.50	2 7/16	10.40	3 7/16	19.45	4 7/16	34.10
1 11/16	5.60	2 11/16	13.00	3 11/16	25.45	4 11/16	43.35
1 15/16	7.15	2 15/16	14.95	3 15/16	28.70	4 15/16	46.40

SIDE JOURNAL BEARINGS

These Journals can be used where speed is low. Power, light, and first cost an object. Adjustment is provided for in bolt slots.

Size	Solid Journal Boxes Bored	Solid Journal Boxes Babbitted	Size	Solid Journal Boxes Bored	Solid Journal Boxes Babbitted
15/16	$0.75	$0.95	2 11/16	$4.00	$3.60
1 3/16	.90	1.20	2 15/16	5.00	4.80
1 7/16	1.25	1.50	3 3/16	6.00	5.90
1 11/16	1.60	1.80	3 7/16	7.25	7.30
1 15/16	2.00	2.10	3 11/16	8.50	9.00
2 3/16	2.60	2.70	3 15/16	10.00	11.00
2 7/16	3.25	3.20	....	....	.....

COMMON FLAT BOX

Light in weight and strong; designed as an inexpensive bearing and for light work.

Lubrication is provided for by means of a cup reservoir in the cap. The bolt slots in base allow for side adjustment.

Shaft sizes, inches.....	15/16	1 3/16	1 7/16	1 11/16	1 15/16	2 3/16	2 7/16	2 11/16	2 15/16	3 3/16	3 7/16	3 11/16	3 15/16
Each.....$	1.00	1.35	1.65	2.00	2.30	2.80	3.40	4.10	5.00	6.20	7.60	9.50	11.80

STANDARD RIGID PILLOW BLOCKS

Constructed on lines combining simplicity and strength. Bearings are of standard length, babbitted, bored and ends faced off. Compression grease cups or lubricating candles may be used economically with this style of pillow block. Liberal side adjustment provided through oblong slots in base. Bearings three diameters of shaft in length.

Shaft sizes, inches.....	7/8-1	1 1/16-1 1/4	1 5/16-1 1/2	1 9/16-1 3/4	1 13/16-2	2 1/16 2 1/4	2 5/16-2 1/2	2 9/16 2 3/4	2 13/16-3	3 1/16-3 1/4	3 5/16-3 1/2	3 9/16
Each.....$	1.30	1.60	2.10	2.70	3.70	4.60	5.50	7.00	8.80	11.00	12.80	14.40

Shaft sizes, inches.....	3 3/4	3 13/16-4	4 1/16-4 1/4	4 5/16-4 1/2	4 9/16 4 3/4	4 13/16-5	5 1/16-5 1/2	5 9/16-6	6 1/16-6 1/2	6 9/16-7	7 1/16-7 1/2	7 9/16-8
Each.....$	14.40	16.00	18.50	21.00	24.00	27.00	34.00	43.00	52.00	61.00	70.00	80.00

EXTENSION WALL BRACKETS WITH SLOTS

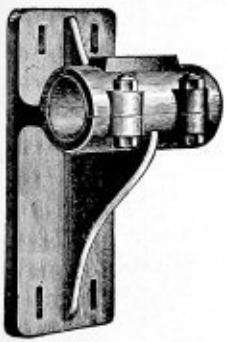
For Rigid Pillow Blocks

Shaft Sizes inches	Extension from Wall to Shaft Center inches	Each
1 3/4 to 2 1/2	12	$8.60
	18	11.80
	24	16.60
	30	19.60
	36	24.20
2 3/4 to 3 1/2	12	13.90
	18	19.90
	24	25.90
	30	31.90
	36	37.70
3 3/4 to 4 1/2	12	18.70
	18	26.20
	24	33.60
	30	41.00
	36	48.40
4 3/4 to 5 1/2	18	30.60
	24	38.60
	30	48.60

RIGID POST OR BRACKET BOXES

Standard

The bearings are all babbitted, reamed and faced on ends for collars. This feature, in connection with those mentioned above, makes them most serviceable bearings for heavy post duty where good boxes are desired.

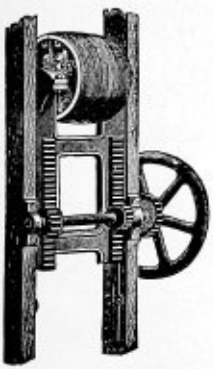


Standard

Size	Each	Size	Each
1 7/16	$3.60	3 3/16	$12.70
1 11/16	4.10	3 7/16	14.10
1 15/16	5.45	3 11/16	18.40
2 3/16	7.25	3 15/16	22.40
2 7/16	8.35	4 3/16	27.15
2 11/16	9.15	4 7/16	31.90
2 15/16	10.35	4 15/16	40.10

IRON FRAME BELT TIGHTENER

Can Furnish with Wood or Iron Pulleys



Number	Length of Adjustment	Pulley	Each
00C	18 inches	12x 9	$30.00
0C	20 "	18x12	40.00
1C	24 "	24x14	56.00
2C	42 "	28x20	82.00
3C	48 "	36x28	120.00
4C	60 "	42x38	250.00

TAKE-UPS

For use where it is necessary to take up slack in belts, as in elevators. Made to pull and push. In ordering, give Diameter of Shaft and Style.

No. of Frame	Diameter of Shaft	Per Pair "A" or "B"	No. of Frame	Diameter of Shaft	Per Pair "A" or "B"
4	11/16	$3.50	12	2 7/16	$13.50
4	13/16	3.80	20	2 9/16	19.00
4	15/16	4.00	20	2 11/16	20.00
5	1 3/16	5.10	20	2 13/16	22.00
5	1 5/16	5.40	20	2 15/16	27.00
7	1 7/16	6.50	24	3 5/16	30.00
7	1 9/16	7.00	36	3 5/16	40.00
7	1 11/16	8.00	48	3 5/16	70.00
9	1 15/16	9.50	60	3 5/16	80.00
9	2 3/16	10.00	72	4 7/16	100.00
12	2 5/16	12.50	....	....	.....

The number of frame indicates length of movement in inches.

STEEL AND IRON PIPE

STEAM, GAS AND WATER PIPE

Nominal Inside Diam.	Price per Foot	Nominal Outside Diam.	Thickness	Nominal Weight per foot.	No. of Threads per inch of Screw
⅛	.05½	.405	.068	0.24	27
¼	.05½	.540	.088	0.42	18
⅜	.05½	.675	.091	0.56	18
½	.08½	.840	.109	0.84	14
¾	.11½	1.05	.113	1.12	14
1	.16½	1.315	.134	1.67	11½
1¼	.22½	1.66	.140	2.24	11½
1½	.27	1.90	.145	2.68	11½
2	.36	2.375	.154	3.61	11½
2½	.57½	2.875	.204	5.74	8
3	.75½	3.500	.217	7.54	8
3½	.95	4.000	.226	9.00	8
4	1.08	4.500	.237	10.66	8
4½	1.30	5.000	.246	12.49	8
5	1.45	5.563	.259	14.50	8
6	1.88	6.625	.280	18.76	8
7	2.35	7.625	.301	23.27	8
8	2.50	8.625	.276	25.00	8
8	2.82	8.625	.322	28.18	8
9	3.40	9.625	.344	33.70	8
10	3.20	10.75	.278	32.00	8
10	3.50	10.75	.306	35.00	8
10	4.00	10.75	.366	40.00	8
11	4.50	11.75	.375	45.00	8
12	4.50	12.75	.328	45.00	8
12	4.90	12.75	.375	49.00	8
13	5.75	14.00	.375	56.10	8
14	6.50	15.00	.375	60.70	8
15	7.00	16.00	.375	64.90	8

On orders for 8, 10 and 12 inch pipe which do not specify the weight desired, we will furnish 8 inch 25 lb., 10 inch 35 lb., and 12 inch 45 lb. pipe, respectively.

Unless otherwise ordered, black pipe, random lengths with threads and couplings, will be shipped.

EXTRA STRONG AND DOUBLE EXTRA STRONG

Size	Blk. and Galv. per foot	Actual Outside Diameter	Nominal Inside Diameter	Thickness	Nominal Weight per foot
X Strong					
⅛	$0.11	.405	.205	.100	.29
¼	.11	.540	.294	.123	.54
⅜	.11	.675	.421	.127	.74
½	.12	.840	.542	.149	1.09
¾	.15	1.05	.736	.157	1.39
1	.22	1.315	.951	.182	2.17
1¼	.30	1.66	1.272	.194	3.00
1½	.36	1.90	1.494	.203	3.63
2	.50	2.375	1.933	.221	5.02
2½	.81	2.875	2.315	.280	7.67
3	1.05	3.500	2.892	.304	10.25
3½	1.33	4.000	3.358	.321	12.47
4	1.50	4.500	3.818	.341	14.97
4½	1.95	5.000	4.280	.360	18.22
5	2.16	5.563	4.813	.375	20.54
6	2.90	6.625	5.750	.437	28.58
XX Strong					
½	.25	.84	.244	.298	1.70
¾	.30	1.05	.422	.314	2.44
1	.37	1.315	.587	.364	3.65
1¼	.52	1.66	.885	.388	5.20
1½	.65	1.90	1.088	.406	6.40
2	.95	2.375	1.491	.442	9.02
2½	1.37	2.875	1.755	.560	13.68
3	1.92	3.50	2.284	.608	18.56
3½	2.45	4.00	2.716	.642	22.75
4	2.85	4.50	3.136	.682	27.48
4½	3.30	5.00	3.564	.718	32.53
5	3.80	5.563	4.063	.75	38.12
6	5.30	6.625	4.875	.875	53.11

Extra strong and double extra strong will be shipped in random lengths and plain ends, unless otherwise ordered.

For cut lengths, an extra charge will be made above random.

For galvanized or asphalted, an extra charge will be made above black.

BOILER TUBES

PRICE LIST — LAP-WELDED STEEL OR IRON

Outside Diameter..inches	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4½	5	6
Thickness Nearest B.W.G.	13	13	13	13	13	13	12	12	12	11	11	11	10	10	9	8
Price .....per foot	$0.30	.28	.27	.22	.20	.24	.28	.34	.35	.40	.44	.50	.55	.62	.75	1.00

These prices are for tubes up to 20 feet long.

For tubes in excess of that length extra charge will be made.

BRASS TUBING

IRON PIPE SIZE

Made to Correspond With Iron Pipe and Fit Iron Pipe Fittings

Size.....inches	⅛	¼	⅜	½	¾	1	1¼	1½	2
Approximate Weight ...per foot	.30	.43	.58	.80	1.17	1.67	2.42	2.92	4.17
Price..... per pound	....	....	....	....	....	....	....	....	....

TAYLOR'S SPIRAL RIVETED PIPE

Send Sketch. Prices on Application.

FITTINGS FOR WROUGHT IRON PIPE

CAST AND MALLEABLE IRON

Price Each

ELBOWS

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Cast iron Elbows, R. H.	$0.05	.05	.05	.06	.08	.10½	.16	.20	.28	.50	.75	1.05	1.20	1.75	2.00	2.75
" " Reducing,	..	..	.06	.07	.09	.12	.18	.23	.32	.60	.85	1.20	1.40	2.00	2.30	3.15
" " 45°	..	.06	.06	.07	.10	.12	.19	.24	.34	.60	.90	1.25	1.45	2.20	2.50	3.45
Malleable iron Elbows, R. H.	.04	.04	.06	.10	.15	.22	.25	.35	.50	.80	1.50	2.25	3.00	3.50	4.00	5.00
Malleable iron Elbows, 45°	.08	.08	.10	.12	.18	.26	.36	.54	.82	1.25	2.50	3.25	4.50	....	....	....

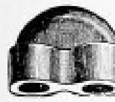
TEES

Size, inches,	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Cast iron Tees, Regular,	$0.08	.08	.08	.09	.12	.15	.23	.29	.41	.73	1.10	1.50	1.75	2.55	3.00	4.00
" " Reducing,	..	..	.09	.10	.14	.17	.27	.33	.47	.83	1.25	1.75	2.00	2.95	3.50	4.60
Malleable iron Tees, Regular	.07	.07	.08	.11	.15	.25	.30	.45	.60	1.05	1.70	2.50	3.40	....	....	....

CROSSES

Size, inches,	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Cast iron Crosses Regular,	..	..	$0.15	.16	.22	.27	.42	.53	.75	1.30	2.00	2.70	3.15	4.60	5.50	7.25
" " Reducing,	..	..	..	.18	.25	.30	.46	.60	.83	1.45	2.20	3.00	3.50	5.10	6.00	8.00
Malleable iron Crosses, Regular	.08	.08	.10	.12	.20	.30	.40	.60	1.00	1.75	3.00	3.25	5.25	....	....	....

RETURN BENDS



Size, inches,	1/8	1/4	3/8	1/2	3/4	1	1¼	1½	2	2½	3
Cast iron Return Bends	..	..	..	$0.18	.20	.22	.28	.40	.57	1.20	1.70
Malleable iron Return Bends,	..	..	..	.13	25	.35	.50	.75	1.00	...	...

REDUCERS

Size, inches,	1/8	1/4	3/8	1/2	3/4	1	1¼	1½
Cast iron Reducers each	....	....	....	....	....	....	....	....
Malleable iron " "	....	$0.03	.03	.05	.10	.16	.20	.28
Size, inches,	**2**	**2½**	**3**	**3½**	**4**	**4½**	**5**	**6**
Cast iron Reducers each	$0.43	.60	.80	1.00	1.35	1.85	2.00	2.70
Malleable iron " "	.45	.70	1.00	1.50	1.85	....	....	....

BUSHINGS

Size, inches,	1/8	1/4	3/8	1/2	3/4	1	1¼	1½
Cast iron Bushings each,	$0.04	.04	.04	.04	.05	.06	.07	.09
Size, inches,	**2**	**2½**	**3**	**3½**	**4**	**4½**	**5**	**6**
Cast iron Bushings each,	$0.14	.21	.30	.40	.50	.75	.93	1.25

LOCK NUTS

Size, inches,	1/8	1/4	3/8	1/2	3/4	1	1¼	1½
Cast iron Lock Nuts each,	....	....	....	....	....	....	....	....
Malleable iron " "	....	$0.02	.03	.04	.05	.07	.09	.11
Size, inches,	**2**	**2½**	**3**	**3½**	**4**	**4½**	**5**	**6**
Cast iron Lock Nuts each,	$0.25	.27	.34	.47	.64	.85	.90	1.30
Malleable iron " "	....	....	....	....	....	....	....	....

CAPS

Size, inches,	1/8	1/4	3/8	1/2	3/4	1	1¼	1½
Cast iron Caps each,	....	....	....	....	....	....	....	....
Malleable iron Caps "	....	$0 03	.04	.05	.08	.12	.16	.24
Size, inches,	**2**	**2½**	**3**	**3½**	**4**	**4½**	**5**	**6**
Cast iron Caps each.	....	....	....	....	$0.87	1.05	1.20	1.55
Malleable iron Caps "	$0.32	.45	.85	1.00	1.20	....	....	....

PLUGS

Size, inches,	1/4	3/8	1/2	3/4	1	1¼	1½	2
Cast iron Plugs each,	$0.02	.02	.02	.03	.04	.05	.07	.10
Size, inches,	**2½**	**3**	**3½**	**4**	**4½**	**5**	**6**	
Cast iron Plugs each,	$0.18	.25	.38	.42	65.	.88	1.20	....

FITTINGS FOR WROUGHT IRON PIPE

MALLEABLE UNIONS

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Malleable iron....each	$0.18	.18	.20	.22	.27	.33	.46	.58	.75	1.55	2.10	3.65	4.35	..	..	..

FLANGE UNIONS

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Cast iron Flange Unions, including bolts and packing, ...each	$0.40	.46	.52	.64	.78	1.00	1.25	1.50	1.80	2.10	2.70	3.15	3.95

Y BENDS

Size.....inches	1/8	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Cast iron Y Bend..each	$0.20	.28	.34	.54	.66	.94	1.66	2.50	3.50	4.00	5.90	7.00	9.20

RETURN BENDS, BACK OUTLET

Cast Iron

Size.....inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, right hand.....each	$0.38	.42	.60	.80	1.15	2.00	3.00
" " and left..... "	.42	.48	.70	.95	1.30	2.30	3.50
Distance between centers.....inches	1 7/8	2 1/4	2 1/4	2 1/2	3 1/4	3 3/4	4 1/4

The back outlet of right and left Return Bends is always tapped right hand.

COUPLINGS

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
Wrought iron Coupling, right-hand..ea.	$0.05	.05	.06	.07	.10	.13	.17	.21	.28	.40	.60	.80	1.00	1.50	1.65	2.40
Malleable iron Coupling, right and left...each.	.04	.05	.08	.12	.16	.25	.36	.52	..	..	..	..	....	....	....	....

UNION ELBOWS

Malleable Iron

With Female Union

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Price with female union..ea.	$0.42	.54	.63	.90	1.05	1.55	2.85
" " male union... "	.48	.62	.72	1.05	1.20	1.80	3.30

With Male Union

STREET ELBOWS

Malleable Iron

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Price.....each	$0.10	.10	.12	.20	.25	.40	.55	.90	1.50

FOUR-WAY TEES

Malleable Iron

Size...in.	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Price..ea.	$0.12	14	20	35	50	80	1.25

SERVICE TEES

Malleable Iron

Size...in.	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Price..ea.	$0.15	.25	.35	.50	.75	1.15	2.00

UNION TEES

Malleable Iron

With Female Union

Size.....inches	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Price with female union..ea.	$0.45	.57	.70	.95	1.15	1.70	3.20
" " male union.. "	.52	.65	.80	1.10	1.30	1.95	3.70

With Male Union

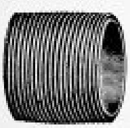
FITTINGS FOR WROUGHT IRON PIPE

Cast Iron Flanges

Size of Pipe, ins. / Diam. Flange inches	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6	7	8	9	10	12
3	*$.10	$0.10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3½	.15	*.15	*$.15	$0.15	$0.16	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4	.22	.22	.22	*.16	*.16	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4½	.25	.25	.25	....	.25	*$.22	....	....	....	....	....	....	....	....	....	....	....	....	....
5	.35	.35	.30	.30	.30	.30	$0.35	....	....	....	....	....	....	....	....	....	....	....	....
5½	....	....	.45	.40	.40	.40	*.35	....	....	....	....	....	....	....	....	....	....	....	....
6	....	....	.50	.42	.40	.40	.42	$0.42	$0.50	....	....	....	....	....	....	....	....	....	....
6½	....	....	....	....	.60	....	.50	.50	.50	$0.65	....	....	....	....	....	....	....	....	....
7	....	....	....	.75	.70	.70	.62	.62	.62	.75	....	....	....	....	....	....	....	....	....
7½	....	....	....	....	....	.85	.80	.80	.75	.85	$0.90	....	....	....	....	....	....	....	....
8	....	....	....	....	....	.95	.90	.90	.90	.90	.90	....	....	....	....	....	....	....	....
8½	....	....	....	....	....	1.15	1.10	1.10	1.10	1.00	1.00	....	....	....	....	....	....	....	....
9	....	....	....	....	....	1.35	1.30	1.25	1.15	1.15	1.15	$1.15	$1.40	....	....	....	....	....	....
9½	....	....	....	....	....	....	....	1.75	1.60	1.60	1.50	1.25	1.50	$1.50	....	....	....	....	....
10	....	....	....	....	....	2.25	2.15	2.00	1.80	1.50	1.50	1.50	1.50	1.50	....	....	....	....	....
11	....	....	....	....	....	....	....	....	2.25	....	2.00	1.75	1.75	1.75	$2.20	....	....	....	....
12	....	....	....	....	....	....	....	....	3.00	....	2.50	....	2.20	2.20	2.20	$2.80	....	....	....
13	....	....	....	....	....	....	....	....	3.50	....	3.25	....	3.00	2.80	2.80	2.80	....	....	....
14	....	....	....	....	....	....	....	....	....	....	....	....	....	3.25	3.25	3.25	....	....	....
15	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.00	4.00	$4.00	$4.50	....
16	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5.00	5.00	5.00	....
17	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6.50	5.75	5.75	$7.00
18	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	8.00	....	7.00	7.00
19	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7.50	7.50
20	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	8.50

Those marked * are drilled for screw.

WROUGHT IRON NIPPLES
Sizes and Lengths Kept in Stock



Close

Long

Length, Inches						Size, ins.	Prices		Price of Extra Long Nipples — Inches								
Close	Short	Long					Close or Short	Long	4	5	6	7	8	9	10	11	12
¾	1½	2	2½	3	3½	⅛	$0.04	$0.06	$0.07	$0.08	$0.10	$0.12	$0.14	$0.15	$0.17	$0.18	$0.19
⅞	1½	2	2½	3	3½	¼	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1	1½	2	2½	3	3½	⅜	.04	.06	.07	.08	.10	.12	.14	.15	.17	.18	.19
1⅛	1½	2	2½	3	3½	½	.05	.07	.08	.10	.12	.14	.16	.18	.20	.22	.23
1⅜	2	2½	3	3½	4	¾	.06	.09	....	.11	.13	.17	.18	.20	.22	.24	.26
1½	2	2½	3	3½	4	1	.08	.13	....	.15	.18	.23	.25	.28	.31	.34	.36
1⅝	2½	3	3½	4	4½	1¼	.11	.17	....	.20	.24	.29	.33	.36	.40	.44	.47
1¾	2½	3	3½	4	4½	1½	.13	.20	....	.25	.29	.36	.40	.45	.50	.54	.59
2	2½	3	3½	4	4½	2	.18	.27	....	.32	.38	.50	.54	.59	.65	.72	.77
2½	3	3½	4	4½	5	2½	.39	.59	....	....	.68	.90	.97	1.06	1.17	1.26	1.35
2½	3	3½	4	4½	5	3	.48	.72	....	....	.85	1.08	1.20	1.33	1.45	1.58	1.70
2¾	4	4½	5	5½	6	3½	.75	1.05	....	....	....	1.30	1.45	1.60	1.75	1.90	2.05
3	4	4½	5	5½	6	4	.85	1.20	....	....	....	1.52	1.69	1.87	2.05	2.22	2.40
3	4	4½	5	5½	6	4½	1.25	1.70	....	....	....	2.25	2.50	2.75	2.95	3.17	3.40
3¼	4½	5	5½	6	6½	5	1.55	2.45	....	....	....	2.58	2.83	3.10	3.35	3.60	3.85
3¼	4½	5	5½	6	6½	6	1.85	2.90	....	....	....	3.05	3.35	3.70	4.00	4.30	4.65
3½	5	....	....	....	....	7	3.20	....	....	....	3.60	4.05	4.45	4.90	5.30	5.75	6.15
3½	5	....	....	....	....	8	3.55	....	....	....	4.05	4.55	5.05	5.50	6.00	6.50	7.00
4	5	....	....	....	....	9	5.25	....	....	....	....	....	6.50	7.10	7.75	8.40	9.00
4	5	....	....	....	....	10	6.75	....	....	....	....	....	8.25	8.90	9.70	10.40	11.15
4	5	....	....	....	....	12	8.00	....	....	....	....	....	10.00	10.80	11.75	12.70	13.65

Nipples made to order from extra heavy pipe at double above list

FITTINGS FOR IRON PIPE

BRANCH TEES

No. 1. For Circulation

No. 2. For Circulation

No. 3. For Box Coils

No. of Branches	1 in. Branch Tees 2¼ in. Center to Center			1¼ in. Branch Tees 3 in. Center to Center			1½ in. Branch Tees 3½ in. Center to Center			2 in. Branch Tees 4½ in. Center to Center		
	1 in. or 1¼ in. Run	1½ in. Run	2 in. Run	1¼ in. or 1½ in. Run	2 in. Run	2½ in. Run	1½ in. or 2 in. Run	2½ in. Run	3 in. Run	2 in. Run	2½ in. or 3 in. Run	3½ in. Run
2	$0.90	$1.00	$1.15	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	1.05	1.15	1.35	$1.65	$1.90	$2.40	$2.70	$3.45	$3.80	$5.25	$5.75	$6.25
4	1.15	1.30	1.60	2.00	2.40	2.85	3.35	4.15	4.60	6.40	7.00	7.75
5	1.35	1.45	1.85	2.40	2.90	3.55	4.00	5.00	5.50	7.65	8.50	9.25
6	1.60	1.75	2.10	2.80	3.30	3.95	4.65	5.75	6.25	8.80	9.75	10.75
7	1.90	2.20	2.45	3.20	3.90	4.20	5.25	6.50	7.25	10.60	11.75	13.00
8	2.20	2.45	2.75	3.60	4.50	4.95	5.85	7.00	7.75	11.50	12.75	14.00
9	2.65	2.90	3.40	4.30	5.25	6.15	6.50	8.25	9.00	12.25	13.50	15.00
10	.....	3.30	4.00	4.80	5.85	6.85	7.60	9.25	10.00	13.50	15.00	16.50
11	.....	4.50	4.80	5.00	6.25	7.25	8.00	9.75	10.75	.....	.....	.....
12	.....	4.75	5.10	5.25	6.50	7.65	8.50	10.50	11.50	.....	.....	.....
13	.....	5.50	6.00	6.00	7.00	8.25	.....	.....	.....	.....	.....	.....
14	.....	7.00	7.25	6.75	7.75	9.00	.....	.....	.....	.....	.....	.....
15	.....	7.50	7.75	7.50	8.50	9.75	.....	.....	.....	.....	.....	.....
16	.....	8.00	8.25	8.50	9.50	10.75	.....	.....	.....	.....	.....	.....

1 inch Branch Tees, 1 inch or 1¼ inch run, are 1¾ inches inside diameter. 1 inch Branch Tees, 1½ inch or 2 inch run, are 2¼ inches inside diameter. 1¼ inch Branch Tees are all 2½ inches inside diameter. 1½ inch Branch Tees are all 2¾ inches inside diameter. 2 inch Branch Tees are all 3½ inches inside diameter. Always order Branch Tees by size and number.

All openings in Branch Tees for circulation are tapped right hand. Branch Tees for Box Coils are always tapped left hand in branches and right hand in back inlet. The run and back opening of Branch Tees are tapped the same size as branches, unless otherwise ordered.

HOOK PLATES

No. of Hooks.....................inches	1	2	3	4	5	6
For 1 in. Pipe, 2½ in. between centers	$0.09	$0.18	$0.23	$0.26	$0.32	$0.38
" 1¼ " " 3 " " "	.10	.21	.27	.32	.41	.52
" 1½ " " 3½ " " "	.15	.28	.43	.58	.72	.88
" 2 " " 4½ " " "	.22	.43	.65	.90	1.15	1.35

SLOTTED ANGLE FLANGE

Slotted Angle Flanges will make any angle up to and including ten degrees. Any angle up to the maximum can be simply made by shifting the two flanges to the desired position. The slot in the bolt circle gives bolt hole for any position, and after adjusting to the desired angle, fitting is made up in usual manner.

Method of Making Angle with Slotted Angle Flange

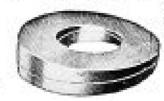
Size............inches	2	2½	3	3½	4	4½	5	....
Price ....per pair	3.00	4.00	4.50	5.00	6.00	6.70	7.30	....
Size............inches	6	7	8	9	10	12	14	16
Price ....per pair	8.00	11.50	13.00	16.50	18.50	25.00	32.50	45.00

Price is complete with bolts and gasket.
Larger sizes made to order. Prices on application.
The diameter of flange is a trifle larger than standard for strength.

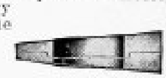
Flanges giving greater angle than 10° made to order.
Throw in 50′ of pipe is 8 feet 8 inches.

ADJUSTABLE WEDGE

Cut Shows Adjustable Wedge in Place



The Adjustable Wedge fits within the bolt circle of standard or extra heavy flanges or flanged fittings, and gives any angle up to approximately 10° in any desired direction. The wedge can advantageously be used in the place of expensive offsets, special fittings, or bent pipe, and makes unnecessary time-consuming machine work, or the undesirable practice of cutting crooked threads.



ADJUSTABLE WEDGE LIST

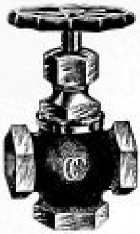
Size............................	2	2½	3	3½	4	4½	5	6	7	8	9
Price....................per pair	3.00	3.25	3.60	4.00	4.50	5.25	6.00	7.00	8.00	9.25	10.25
Throw in 50′....................	9′ 7″	8′ 0″	7′ 3″	6′ 2″	6′ 7″	7′ 4″	6′ 7″	5′ 10″	5′ 1″	5′ 9″	5′ 1″
Maximum Thickness of ½ Wedge	⅝″	⅝″	⅝″	⅝″	¾″	¾″	¾″	¾″	¾″	⅞″	⅞″
Minimum " " " "	¼″	¼″	¼″	¼″	¼″	¼″	¼″	¼″	¼″	¼″	¼″

Size............................	10	12	14	16 o. d.	18 i. d.	20 i. d.	22 i. d.	24 i. d.	30 i. d.
Price....................per pair	11.50	13.50	16.50	22.00	28.00	35.00	43.00	53.00	65.00
Throw in 50′....................	5′ 8″	5′ 6″	5′ 0″	5′ 0″	4′ 8″	4′ 9″	......	......	4′ 4″
Maximum Thickness of ½ Wedge	1″	1⅛″	1⅛″	1¼″	1¼″	1⅜″	......	......	2″
Minimum " " " "	¼″	¼″	¼″	¼″	¼″	¼″	......	......	½″

Price per pair includes Copper Gasket.

Globe

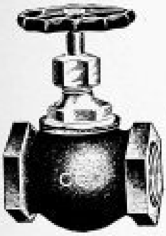
Angle


Cross

BRASS VALVES

Size, inches	1/8	1/4	3/8	1/2	3/4	1	1¼
Standard Globe Valves, each	$0.72	$ .72	$0.77	$1.00	$1.26	$1.80	$2.52
" Angle " "	.72	.72	.77	1.00	1.26	1.80	2.52
" Cross " "	......	1.25	1.25	1.50	2.00	2.50	3.50

Size, inches	1½	2	2½	3	3½	4
Standard Globe Valves, each	$3.50	$5.30	$10.00	$14.40	$26.50	$36.00
" Angle " "	3.50	5.30	10.00	14.40	26.50	36.00
" Cross " "	5.00	8.00	16.00	24.00	......	......


Globe

Angle

Globe, with Yoke

IRON VALVES

Brass Trimmings

Size, inches	2	2½	3	3½	4	4½
Screwed..........each	$5.40	$7.35	$9.80	......	......	......
Flanged.......... "	7.00	9.00	12.50	......	......	......
Screwed, with Yoke, "	7.00	9.00	12.50	$15.25	$19.00	$24.00
Flanged, " "	8.60	10.75	15.00	18.50	22.50	27.50

Size, inches	5	6	7	8	10	12
Screwed, with Yoke, each	$27.00	$37.50	$63.00	$72.00	$114.00	$170.00
Flanged, " "	31.00	42.00	68.00	77.00	123.00	187.00

Angle

Globe

CROSBY SPRING SEAT VALVES

Brass

Size		¼ in.	⅜ in.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	Series A. 2 in.	2½ in.	3 in.
Valves	Globe	$2.25	$2.40	$2.50	$3.50	$4.75	$7.00	$8.50	$17.50	$17.50	$30.00	$65.00
	Angle	2.25	2.40	2.50	3.50	4.75	7.00	8.50	17.50	17.50	30.00	65.00
Disc Seats	Globe	.18	.19	.20	.22	.30	.42	.54	.84	.84	1.00	1.30
	Angle	.19	.20	.22	.24	.36	.58	.90	1.30	.84	1.00	1.30
Val've Seats	Globe	.11	.12	.14	.16	.20	.24	.30	.42	.42	1.00	1.30
	Angle	.11	.12	.14	.16	.20	.24	.30	.42	.42	1.00	1.30

BRASS VULCANIZED ASBESTOS DISC VALVES

Size, inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
Globe.....each	$1.10	$1.25	$1.60	$2.20	$2.80	$4.00	$5.50	$8.75	$15.75	$22.00
Angle..... "	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
Cross..... "	......	......	2.25	2.50	3.25	4.75	6.25	9.50	20.00	30.00
Asbestos Discs "	.14	.07	.09	.10	.12	.18	.25	.36	.48	.60

Globe

Asbestos Discs

Angle

CROSBY SPRING-SEAT VALVE

IRON GLOBE — YOKE TOP

All Working Parts Renewable

Screwed Ends

Flanged Ends

CROSBY SPRING-SEAT VALVE

IRON GLOBE — PLAIN TOP

All Working Parts Renewable

Screwed Ends

Flanged Ends

Sizes	2½ in.	3 in.	3½ in.	4 in.	4½ in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
Screwed	$22.50	$30.50	$38.50	$46.00	$61.00	$76.00	$95.50	......	......	......	......	......
Flanged	25.50	33.50	42.00	50.00	65.00	80.00	100.00	$138.00	$176.00	$215.00	$270.00	$385.00
Disc Seats	1.00	1.30	1.70	2.20	2.80	3.50	4.70	7.00	9.00	11.50	14.50	19.00
Valve Seats	1.00	1.30	1.70	2.20	2.80	7.75	10.50	13.50	16.50	19.50	22.50	28.50

Sizes	2 in.	2½ in.	3 in.
Screwed	$17.50	$22.50	$30.50
Flanged	22.50	25.50	33.50
Disc Seats	.84	1.00	1.30
Valve Seats	.42	1.00	1.30

LUNKENHEIMER'S PATENT REGRINDING BRASS VALVES

Globe

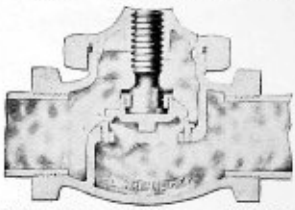
Check Valves

Angle

Size.....inches,	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Globe Valves.....each,	$0.70	.70	.85	1.15	1.45	2.00	2.80	3.90	6.20	12.00	16.50
Angle " ..... "	$0.70	.70	.85	1.15	1.45	2.00	2.80	3.90	6.20	12.00	16.50
Finished all over, with brass wheel.....each,	$1.75	1.90	2.15	2.50	3.10	3.65	5.25	7.25	10.75	22.00	33.50
Cross Valves..... "	$....	1.00	1.00	1.50	2.00	2.70	3.50	5.10	8.00	16.00	24.00
Check " Horizontal, Angle, Vertical.....each,	$0.50	.50	.60	.85	1.15	1.55	2.30	3.25	5.20	10.00	14.00

"Renewo" Globe Valve Screw Ends

LUNKENHEIMER BRASS "RENEWO" VALVES RENEWABLE SEAT AND DISC



Detail View of "Renewo" Globe Valve, Illustrating Self-cleansing Seat Feature

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Screw End Globe or Angle Valves...each	$1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	22.00
Flange " " " " " ... "	$....	4.00	4.00	5.00	6.00	9.00	11.00	16.50	25.00	34.00

Globe

Disc

Angle

Globe with Yoke

Globe

JENKINS BROS. BRASS VALVES

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	22.00
Brass Globe & Angle Valves, screwed .....each	$1.10	1.10	1.25	1.60	2.20	2.80	4.00	5.50	8.75	15.75	3

LIST OF JENKINS DISC FOR VALVES

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
Price .....each	$0.03	.04	.04	.05	.06	.09	.12	.18	.24	.33	.45	.52
Size.....inches	4 1/2	5	6	7	8	10	12	14	16	18	20	24
Price .....each	$0.60	.68	.90	.98	1.20	1.75	2.25	3.00	4.00	5.00	6.00	9.00

JENKINS BROS. IRON BODY VALVES BRASS TRIMMINGS

Inches.....	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6	7	8	9	10	12
Globe & Angle..each	$2.80	2.80	3.00	4.00	5.00	7.25	11.00	16.00	....	....	....	....	....	....	....	....	....	....
Globe with Yoke, each	$...	...	...	...	...	10.00	12.00	16.75	19.50	24.00	32.00	40.00	48.00	80.00	90.00	120.00	130.00	185.00

LUNKENHEIMER'S LEVER THROTTLE VALVE

Brass Body

BRASS

Screw Ends only; not made with Flange Ends

Size..... inches	¾	1	1¼	1½	2	2½
Brass body ..... each	$3.00	4.00	5.00	7.00	10.00	19.00

IRON

Brass Mounted

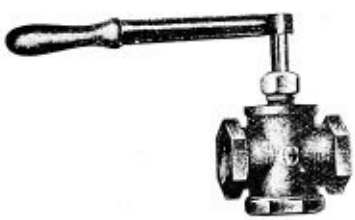
Size..... inches	2½	3	3½	4	5	6
Iron body, brass mounted .....each	$16.00	20.00	25.00	30.00	35.00	40.00

LUNKENHEIMER'S HANDY GATE VALVE

Screw Ends only; not made with Flange Ends

Size.....inches	½	¾	1	1¼	1½	2	2½
Brass body.....each	$1.60	$1.80	$2.50	$3.50	$5.00	$7.50	$13.50
Iron body, brass mounted..... "	.....	.....	.....	.....	.....	7.00	12.00
All iron..... "	.....	3.40	4.00	4.50	6.00	7.00	12.00

Size.....inches	3	3½	4	4½	5	6	8
Brass body.....each	$19.00	$40.00	$60.00	.....	.....	.....	.....
Iron body, brass mounted..... "	15.00	18.00	21.00	$25.00	$30.00	$35.00	$65.00
All iron..... "	15.00	18.00	21.00	25.00	30.00	35.00	65.00



THROTTLE VALVES

Brass

Size.....inches	¾	1	1¼	1½	2	2½
Price..... each	$10.00	11.50	14.00	20.00	25.00	35.00

Flange Ends

LUNKENHEIMER'S "DURO" BLOW-OFF VALVES

With Self-Cleansing Seat

For Working Pressures up to 250 Pounds

Iron Body Brass Mounted

Size..... inches	1¼	1½	2	2½	3
Screw Ends.....each	$7.50	$10.00	$13.50	$18.20	$27.50
Screw and Flange Ends ..... "	8.10	10.80	14.40	19.20	28.60
Flange Ends..... "	8.70	11.20	15.00	20.00	30.00

Screw Ends

STRAIGHT-WAY VALVES
Brass
Double Gate

GATE VALVES

BRASS

Size.....inches	1/4	3/8	1/2	3/4	1
Price.....each	$1.25	1.25	1.30	1.75	2.50

Size.....inches	1 1/4	1 1/2	2	2 1/2	3
Price.....each	$3.50	5.00	7.50	14.00	20.00

IRON BODY

Size.....inches	2	2 1/2	3	3 1/2	4	4 1/2	5
Price.....each	$10.00	12.00	15.00	18.00	20.00	23.00	25.00
End to End...inches	5 7/16	5 7/8	6 1/8	6 1/2	6 7/8	7 1/4	7 5/16

Size.....inches..	6	7	8	9	10	12
Price.....each	$30.00	45.00	55.00	80.00	90.00	125.00
End to End....inches	7 3/4	8 1/4	8 11/16	10 1/4	9 7/8	11 5/8

STRAIGHT-WAY VALVES
Iron Body
Wedge Gate

Style Size 3/4-inch to 6-inch

IRON FOOT VALVES

With Strainer

Size.....inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2
Price.....each	$1.15	1.30	1.40	1.90	2.40	3.30	3.90	5.60

Size.....inches	4	4 1/2	5	6	7	8	10	12
Price.....each	$7.30	10.50	11.25	14.75	35.00	41.00	64.00	100.00

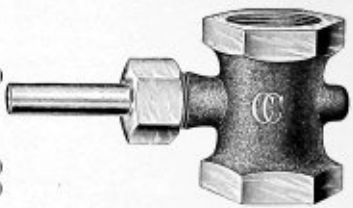
BUTTERFLY VALVES

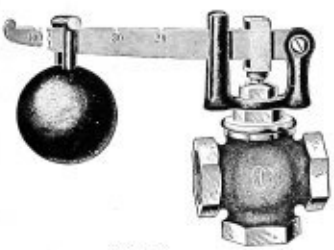
BRASS

Size.....inches	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Price, Screwed..each	$3.10	4.40	5.65	6.75	10.00	13.75	21.00

IRON

Size.....inches	2	2 1/2	3	3 1/2	4	5	6
Price, Screwed..each	$8.00	9.50	12.00	16.00	18.50	28.50	42.50
" Flanged.. "	9.50	11.50	15.00	19.00	22.00	32.00	47.00

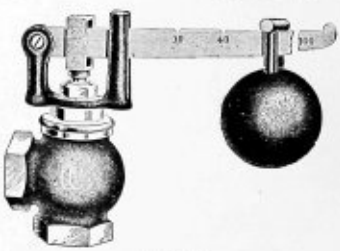




CROSS

SAFETY VALVES

BRASS AND IRON



ANGLE

Size.....inches	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Brass.....each	$2.20	2.50	3.25	3.90	4.70	7.15	9.00	12.50

Size.....inches	3/4	1	1 1/4	1 1/2	2	2 1/2
Iron.....each	$3.50	4.00	5.00	5.80	7.80	13.25

Size.....inches	3	3 1/2	4	4 1/2	5	6
Iron.....each	$17.25	23.00	28.75	34.50	41.50	57.75

We can furnish iron 2-inch and larger flanged. Prices on application.

CHECK VALVES

Horizontal

Vertical

Horizontal with Drip Cock

Size.....inches	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Brass Horizontal Check Valves, each	$0.65	$.065	$0.70	$0.90	$1.15	$1.60	$2.25	$3.15	$4.75
Brass Vertical Check Valves, each	.....	.72	.77	1.00	1.26	1.80	2.52	3.50	5.30
Brass Horizontal Check Valves with Drip Cock....each	.....	.....	.....	2.15	2.55	3.15	4.05	5.40	.....

Size.....inches	2	2 1/2	3	3 1/2	4
Iron Horizontal Check Valves.....each	$3.60	$6.50	$8.90	$12.25	$14.25
" Vertical " " "	.....	9.50	12.50	17.00	21.00

Size.....inches	4 1/2	5	6	7	8
Iron Horizontal Check Valves.....each	$19.00	$22.00	$30.00	$45.00	$57.00
" Vertical " " "	30.00	33.00	40.00	62.00	73.00

Can furnish Iron in Flanged, Special List

JENKINS BROS. BRASS CHECK VALVES

Size in.	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each..	$1.10	$1.10	$1.20	$1.30	$1.90	$2.60	$3.60	$5.00	$7.50	$13.50	$21.00

Horizontal

Vertical

Angle

Screwed

JENKINS BROS. BRASS SWING CHECK VALVES

Self Adjusting

Sizes	1/8	1/4	3/4	1	1 1/4	1 1/2	2	2 1/2	3
Each	$1.20	$1.30	$1.90	$2.60	$3.60	$5.00	$7.50	$14.00	$21.00

Screw Cap, Screw Ends

BRASS CHECK VALVES

Straightway Swinging Asbestos Discs

Size.....inches	1/2	3/4	1	1 1/4
Price.....each	$1.50	$1.75	$2.25	$3.25
" Disc only..... "	.30	.35	.40	.50

Size.....inches	1 1/2	2	2 1/2	3
Price.....each	$4.25	$6.25	$12.00	$20.00
" Disc only..... "	.60	.80	1.30	1.65

LUNKENHEIMER

REGRINDING SWING CHECK VALVES

For Working Pressures up to 125 lbs.
Screw or Flange Ends
Iron Body Brass Mounted

Size.....inches	2	2 1/2	3	3 1/2	4	4 1/2	5	6	8
Medium Pattern, Iron Body Brass Mounted Swing Check Valves, Screw Ends.....each	$6.25	$10.00	$12.00	$16.00	$18.00	$21.00	$25.00	$32.00	$50.00
Medium Pattern, Iron Body Brass Mounted Swing Check Valves, Flange Ends.....each	8.00	12.00	14.50	19.00	21.00	24.50	29.00	37.00	55.00

LUNKENHEIMER

BALL CHECK VALVES

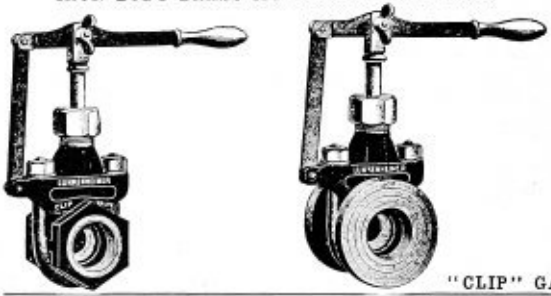
Screw Ends. For Working Pressures up to 200 Pounds Brass

Size.....inches	1/8	1/4	3/8	1/2	3/4	1
Horizontal, Angle or Vertical, Brass Ball Check Valves.....each	$0.85	$0.95	$1.10	$1.60	$2.30	$3.10
Horizontal Brass Ball Check Valves with Drain Cock.....each	.....	.....	1.50	2.00	2.70	3.50
Diameter of Check Balls.....inches	3/8	3/8	1/2	5/8	13/16	1 1/4

Size.....inches	1 1/4	1 1/2	2	2 1/2	3
Horizontal, Angle or Vertical, Brass Ball Check Valves.....each	$4.00	$6.20	$9.40	$18.00	$25.00
Horizontal Brass Ball Check Valves with Drain Cock.....each	4.40	6.60	9.80	18.50	25.50
Diameter of Check Balls.....inches	1 1/8	1 3/4	2 5/8	3	3 1/2

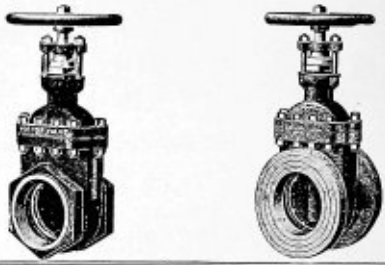
LUNKENHEIMER DOUBLE SEATED "CLIP" GATE VALVES

QUICK OPENING PATTERN
Screw or Flange Ends
For Working Pressures up to 50 Pounds
IRON BODY BRASS MOUNTED OR ALL IRON



LUNKENHEIMER DOUBLE SEATED "VICTOR" GATE VALVES

STATIONARY STEM. MEDIUM PATTERN
For Working Pressures up to 125 Pounds
Screw or Flange Ends
IRON BODY BRASS MOUNTED AND ALL IRON
Special Bronze Composition Stems



"CLIP" GATE VALVES

Size ..... inches	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6
Iron Body, Brass Mounted, Screw Ends ea.	1.50	1.90	2.50	3.50	5.00	7.50	12.00	15.00	...	...	...	...	...
" " " " Flange " "	...	...	3 00	4.90	6.00	8.50	13.50	16.90	...	...	...	...	...
All Iron, Screw Ends ..... "	1.50	1.90	2.50	3.50	5.00	7.50	12.00	15.00	18.00	20.00	23.00	25.00	30.00
" " Flange " ..... "	...	...	3.00	4.90	6.00	8.50	13.50	16.90	20.30	22.50	26.00	28.30	33.80

"VICTOR" GATE VALVES

Size ..... inches	2	2½	3	3½	4	4½	5	6	7	8	9
Iron Body Brass Mounted, Screw Ends ..... each	10.00	12.00	15.50	24.00	32.00	37.50	46.50	58.50	66.00	82.50	98.50
" " " " Flange " ..... "	10.00	12.00	15.50	24.00	32.00	37.50	46.50	58.50	66.00	82.50	98.50

Size ..... inches	10	12	14	15	16	18	20	22	24
Iron Body Brass Mounted, Screw Ends ... each	125.00	170.00	.....	.....	.....	.....	.....	.....	.....
" " " " Flange " .... "	125.00	170.00	200.00	235.00	270.00	325.00	425.00	560.00	700.00

JENKINS BROS. BRASS "Y" OR BLOW-OFF VALVES

STANDARD PATTERN WITH RENEWABLE SEAT RINGS

⅜	½	¾	1	1¼	1½	2	2½	3
$2.00	2.00	3.00	4.00	5.00	6.50	9.25	18.00	25.00

JENKINS BROS. IRON BODY "Y" OR BLOW-OFF VALVES

WITH RENEWABLE SEAT RINGS
BOLTED BONNETS, GLAND STUFFING-BOXES

2	2½	3	3½	4	5	6	8
$11.00	15.00	20.00	28.00	35.00	59.00	70.00	115.00

STANDARD EXPANSON JOINTS

ALL BRASS

SCREWED. STANDARD TRAVERSE

Size ... inches	½	¾	1	1¼	1½	2	2½	3
Traverse in.	2	2¼	2¼	2¼	2¼	2½	2½	2¾
Each	1.50	2.20	2.75	4.00	5.00	8.00	17.50	24.00

STANDARD EXPANSION JOINTS

IRON BODY. BRASS SLEEVE

SCREWED STANDARD TRAVERSE

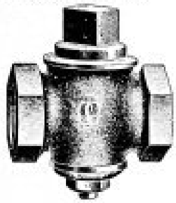
Size ..... inches	2	2½	3	3½	4	5
Traverse ..... inches	2½	2½	2¾	3	3¼	4
Each	7.00	8.00	10.00	14.00	18.00	38.00

Size ..... inches	6	7	8	9	10	12
Traverse ... in.	5	6	7	7	7	8
Each	45.00	70.00	100.00	110.00	160.00	225.00

STEAM COCKS

STANDARD, SQUARE OR FLAT HEAD, BRASS STEAM COCKS

Flat Head



Square Head

Size, inches	¼	⅜	½	¾	1
Each	$0.85	1.00	1.25	1.70	2.35
Size, inches	1¼	1½	2	2½	3
Each	$3.70	4.85	7.30	14.50	22.50

BRASS T HANDLE STEAM COCKS

Size, inches	⅛	¼	⅜
Each	$0.85	.85	1.00

STANDARD, SQUARE OR FLAT HEAD IRON STEAM COCKS

Size, in.	½	¾	1	1¼	1½
Each	$0.90	1.05	1.30	1.60	1.95
Size, in.	2	2½	3	3½	4
Each	$2.70	4.40	6.75	12.00	15.50

STANDARD, SQUARE OR FLAT HEAD, IRON STEAM COCKS WITH BRASS PLUG

Size, in.	½	¾	1	1¼	1½
Each	$1.30	1.60	1.90	2.65	3.75
Size, in.	2	2½	3	3½	4
Each	$5.25	8.75	13.00	27.50	36.50

WRENCHES FOR BRASS, STEAM, AND GAS COCKS

Flat Head

Malleable Iron

Size, inches	½	¾	1	1¼	1½	2	
Number	1	2	3	5	6	7	8
Each	$0.07	.09	.14	.25	.44	.56	1.00

STANDARD, SQUARE BRASS COCKS, FLAT HEAD, MALE AND FEMALE

Size, inches	¼	⅜	½	¾
Each	$1.35	1.45	2.00	2.50
Size, inches	1	1¼	1½	2
Each	$3.00	5.35	6.75	9.85

THREE-WAY, SQUARE HEAD STEAM COCKS BRASS, WITH CHECK

With Extra Large Plug and Full Openings

Size, inches	⅜	½	¾	1
Each	$2.10	2.50	3.00	3.75
Size, inches	1¼	1½	2	2½
Each	$5.75	7.15	11.00	18.75
Size, inches	3	3½	4	....
Each	$26.00	50.00	70.00	....

VULCANIZED ASBESTOS PACKED Screw Ends

Size, inches	⅛	¼	⅜			
Price, Iron, each	$1.30	1.30	1.45			
Size, inches	½	¾	1			
Price, Iron, each	$1.60	2.10	2.50			
Size, inches	1¼	1½	2			
Price, Iron, each	$3.50	4.75	7.00			
Size, inches	2½	3	3½	4	5	6
Price, Iron, each	$12.00	18.00	27.00	30.00	45.00	60.00

WRENCHES FOR BRASS, STEAM, AND GAS COCKS

Square Head

Malleable Iron

Size, inches	½	¾	1	1¼	1½	2	2½ & 3
Number	3	4	5	6	7	8	9
Each	$0.07	.09	.14	.19	.25	.44	.56

WHISTLE VALVES

Brass and Iron

Size, inches	⅜	½	¾	1	1¼
Price, Brass, each	$2.00	2.50	3.00	3.50	5.00

Size, inches	1½	2	2½	3
Price, Brass, each	$6.00	9.00	18.00	27.00
" Iron "	$.....	.....	15.00	18.00

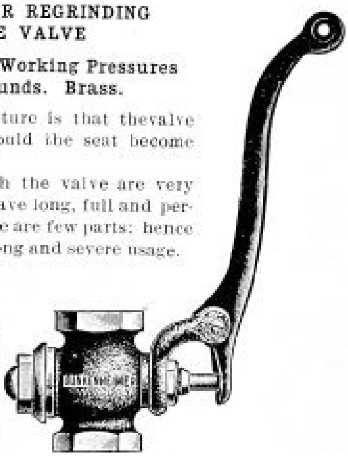
LUNKENHEIMER REGRINDING WHISTLE VALVE

Screw Ends. For Working Pressures up to 200 Pounds. Brass.

An important feature is that thevalve can be reground should the seat become slightly worn.

The areas through the valve are very large, the pipe ends have long, full and perfect threads, and there are few parts: hence the valve will stand long and severe usage.

Size, inches	¼	⅜	½	¾	1
Face to Face, Screw Ends, inches	2$\frac{3}{32}$	2$\frac{1}{16}$	2½	2$\frac{11}{32}$	3$\frac{1}{16}$
Vert. Center of Body to End of Cap, in.	1$\frac{3}{32}$	1$\frac{3}{32}$	1$\frac{3}{32}$	1½	1$\frac{11}{16}$
Each	$2.00	2.00	2.50	3.00	3.50
Size, inches	1¼	1½	2	2½	3
Face to Face, Screw Ends, inches	3$\frac{31}{32}$	4⅜	5$\frac{1}{16}$	6½	6$\frac{11}{16}$
Vert. Center of Body to End of Cap, in.	2$\frac{3}{32}$	2$\frac{3}{32}$	2$\frac{23}{32}$	3$\frac{11}{32}$	4$\frac{1}{16}$
Each	$5.00	6.00	9.00	18.00	27.00



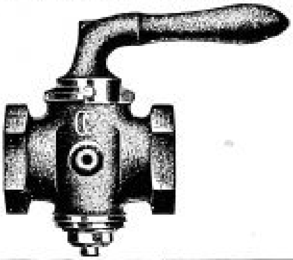
Lever Handle

BIBB COCKS

SCREWED FOR IRON PIPE, WITH SHOULDER

T Handle

Size ... inches	⅜	½	⅝	¾	1	1¼	1½	2
Lever handle, finished bibbs ... per dozen	$21.60	22.80	30.60	36.60	51.00	82.20	123.00	210.00
Lever handle, finished bibbs, for hose ... "	$.....	25.20	33.00	39.00	57.00	91.20	135.00	228.00
T handle, finished bibbs for hose ... "	$.....	16.80	22.80	28.80	54.00	.....	......	......

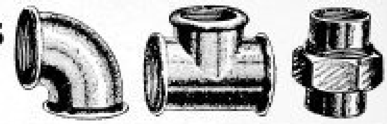


CHECK AND WASTE COCKS

BRASS

Size ... inches	½	¾	1	1¼	1½	2
Price, T Handle ... per dozen / " lever handle ... "	$19.20	26.40	43.20	72.00	108.00	192.00

BRASS STEAM FITTINGS

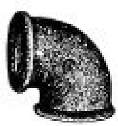


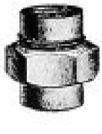
IRON PIPE SIZE

FINISHED

Size ... inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Elbows ... Each	$0.24	$0.34	$0.42	$0.56	$0.70	$1.00	$1.70	$2.20	$3.00	$7.00	$9.00	$14.00	$20.00
" reducing ... "	...	.44	.52	.70	.90	1.25	2.20	2.80	3.80	8.80	11.30	17.50	25.00
" 45° ... "	...	.42	.50	.68	.85	1.25	2.10	2.75	3.75	8.75	11.00	.....	.....
" Street ... "	...	...	.56	.83	1.10	1.50	2.65	3.60	4.75	....	.....	.....	.....
" Drop Female ... "	...	.40	.60	.80	1.20	1.70	2.40	3.80	5.00	....	.....	.....	.....
" Side Outlet ... "	...	...	.60	.80	1.20	1.70	2.40	3.20	....	....	.....	.....	.....
Tees ... "	.30	.40	.60	.80	1.00	1.50	2.00	2.60	3.50	8.00	11.00	18.00	26.00
" Reducing ... "	...	.50	.76	1.00	1.25	1.90	2.50	3.30	4.40	10.00	13.80	22.50	32.50
" Drop, Female ... "	...	...	.70	.90	1.40	2.10	....	....	....	....	.....	.....	.....
" 4-way ... "	...	...	...	1.00	1.40	2.00	2.70	3.60	....	....	.....	.....	.....
Crosses ... "	.40	.60	.80	1.00	1.20	1.60	3.00	4.00	7.00	10.00	14.00	20.00	29.00
" Reducing ... "	...	.75	1.00	1.30	1.50	2.00	3.80	5.00	8.80	12.50	17.50	25.00	36.00
Unions, Ground Joint ... "	.32	.36	.50	.70	.90	1.25	1.70	2.50	3.60	6.00	7.75	15.00	22.50
Bushings ... "	...	.20	.24	.28	.42	.76	1.00	1.35	2.00	3.00	5.00	.....	.....
Plugs ... "	.18	.20	.21	.30	.40	.56	.80	1.00	1.80	2.50	4.00	6.00	8.00
Caps ... "	.30	.30	.40	.50	.70	.90	1.20	1.60	2.20	4.00	6.00	.....	.....
Lock-nuts ... "	.20	.20	.24	.30	.40	.60	.90	1.40	1.90	3.00	5.50	.....	.....
Reducers ... "	...	.32	.44	.64	.90	1.30	1.80	2.25	3.70	6.00	9.00	.....	.....
Couplings ... "	.20	.28	.32	.50	.75	1.00	1.20	1.80	2.70	4.80	7.00	10.50	14.00
" Right and Left ... "	...	.31	.36	.55	.82	1.10	1.35	2.00	3.10	....	....	.....	.....
Return Bends, Close ... "	...	...	...	1.12	1.40	2.00	3.40	4.40	6.00	....	...	.....	....
" " Open ... "	...	...	...	1.40	1.75	2.50	4.30	5.50	7.50	....	....	.....	.....

BRASS STEAM FITTINGS—IRON PIPE SIZE—ROUGH





Size ... inches	⅛	¼	⅜	½	¾	1	1¼	1½	2	2½	3	3½	4
Elbows ... Each	$0.12	$0.17	$0.21	$0.28	$0.35	$0.50	$0.85	$1.10	$1.50	$3.50	$4.50	$7.00	$10.00
Elbows, Reducing ... "	...	.22	.26	.35	.45	.62	1.10	1.40	1.90	4.40	5.65	8.75	12.50
" 45° ... "	...	.25	.30	.40	.50	.75	1.25	1.65	2.25	5.25	6.75	.....	.....
" Street ... "	...	...	.35	.55	.75	1.00	1.80	2.50	3.25	....	....	.....	.....
" Drop, Female ... "	...	.20	.30	.40	.60	.85	1.20	1.90	2.50	....	....	.....	.....
" Side Outlet ... "	...	...	.30	.40	.60	.85	1.20	1.60	....	....	....	.....	.....
Tees ... "	.15	.20	.30	.40	.50	.75	1.00	1.30	1.75	4.00	5.50	9.00	13.00
" Reducing ... "	...	.25	.38	.50	.63	.95	1.25	1.65	2.20	5.00	6.90	11.25	16.25
" Drop Female ... "	...	...	.35	.45	.70	1.05	....	....	....	....	....	.....	.....
" 4-way ... "	...	...	...	.50	.70	1.00	1.35	1.80	....	....	....	.....	.....
Crosses ... "	.20	.30	.40	.50	.60	.80	1.50	2.00	3.50	5.00	7.00	10.00	14.50
" Reducing ... "	...	.38	.50	.65	.75	1.00	1.90	2.50	4.40	6.25	8.75	12.50	18.00
Unions, Ground Joint ... "	.32	.36	.50	.70	.90	1.25	1.70	2.50	3.60	6.00	7.75	15.00	22.50
Bushings ... "	...	.10	.12	.14	.21	.38	.50	.67	1.00	1.50	2.50	.....	.....
Plugs ... "	.09	.10	.12	.15	.20	.28	.40	.50	.90	1.25	2.00	3.00	4.00
Caps ... "	.15	.15	.20	.25	.35	.45	.60	.80	1.10	2.00	3.00	.....	.....
Lock-nuts ... "	.10	.10	.12	.15	.20	.30	.45	.70	.95	1.50	2.75	.....	.....
Reducers ... "	...	.16	.22	.32	.45	.65	.90	1.12	1.85	3.00	4.50	.....	.....
Couplings ... "	.10	.14	.16	.25	.37	.50	.60	.90	1.35	2.40	3.50	5.25	7.00
" Right and Left ... "	...	.17	.20	.30	.45	.60	.75	1.12	1.75	....	....	.....	.....
Return Bends, Close ... "	...	...	...	.56	.70	1.00	1.70	2.20	3.00	....	....	.....	.....
" " Open ... "	...	...	...	.70	.88	1.25	2.15	2.75	3.75	....	....	.....	.....
Nipples, Close ... "	.12	.15	.20	.25	.30	.40	.60	.90	1.25	2.50	3.50	.....	.....
" Short ... "	.14	.18	.25	.30	.38	.50	.75	1.10	1.45	2.75	4.00	.....	.....
" Long ... "	.15	.20	.30	.35	.45	.60	.90	1.25	1.60	3.00	4.50	.....	.....

The lengths of Nipples listed above are the same as lengths given for Iron Pipe Nipples on page 419.

FUSIBLE PLUGS

Size ... inches	½	¾	1	1¼	1½	2
Fusible Plugs Each ...	$0.60	.75	1.00	1.50	2.00	3.00

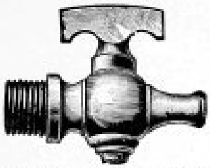
MARINE BOILER FUSIBLE PLUGS

Extra Long

¾x2½ inches long ... each $1.00
1x2½ " " ... " 1.50

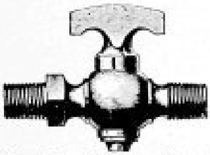
AIR COCKS

BRASS



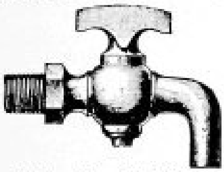
T Handle, Single Thread

Size.....inches,	1/8	1/4	3/8	1/2
Price.....each,	$0.40	.45	.50	.60



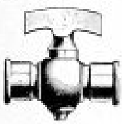
T Handle, Double Thread

Size.....inches,	1/8	1/4	3/8	1/2
Price.....each,	$0.55	.65	.75	.90



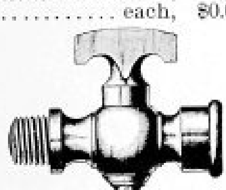
T Handle, Bibb Nose

Size.....inches,	1/8	1/4	3/8	1/2
Price.....each,	$0.70	.80	.90	1.00



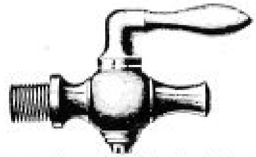
T Handle, Female

Size.....inches,	1/8	1/4	3/8
Price.....each,	$0.65	.70	.85



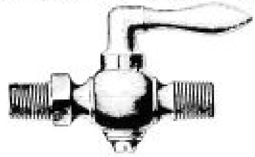
T Handle, Male and Female

Size.....inches,	1/8	1/4	3/8
Price.....each,	$0.75	.80	.90



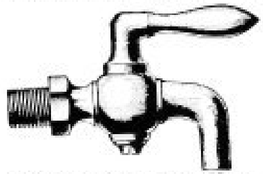
Lever Handle, Single Thread

Size.....inches,	1/8	1/4	3/8	1/2
Price.....each,	$0.55	.60	.65	.75



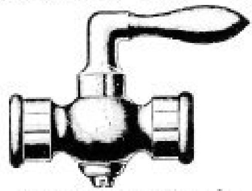
Lever Handle, Double Thread

Size.....inches,	1/8	1/4	3/8	1/2
Price.....each,	$0.70	.80	.90	1.05



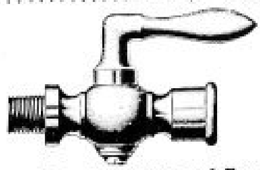
Lever Handle, Bibb Nose

Size.....inches,	1/8	1/4	3/8	1/2
Price.....each,	$0.85	.95	1.05	1.15



Lever Handle, Female

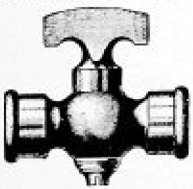
Size.....inches,	1/8	1/4	3/8
Price.....each,	$0.80	.85	1.00



Lever Handle, Male and Female

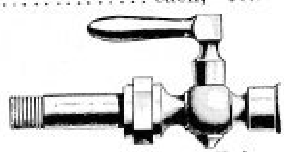
Size.....inches,	1/8	1/4	3/8
Price.....each,	$0.90	.95	1.05

STEAM GAUGE COCKS



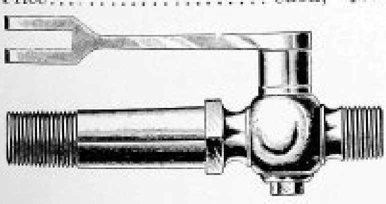
T Handle, Female

Size.....inches,	1/8	1/4	3/8
Price.....each,	$0.65	.70	.85



Lever Handle, with Union

Size.....inches,	1/8	1/4	3/8
Price.....each,	$1.75	1.90	2.00



TRACTION ENGINE CYLINDER COCK

Size Pipe Thread.....inches,	1/4	3/8	1/2	3/4
Price, Short Shank.....each,	$1.30	1.40	1.85	3.25
Price, Long Shank..... "	1.55	1.70	2.20	4.00

SCOTCH WATER GAUGE GLASSES

GENUINE MONCREIFF

Made in Perth, Scotland

Length inches	List per Dozen. External Diameter				Length inches	List per Dozen. External Diameter			
	½ and ⅝	¾	⅞	1 inch		½ and ⅝	¾	⅞	1 inch
10	$3.00	$3.60	$5.04	$6.12	19	$5.64	$7.08	$9.60	$11.52
11	3.24	3.96	5.64	6.72	20	6.00	7.44	10.20	12.12
12	3.60	4.32	6.12	7.32	22	6.60	8.16	11.16	13.44
13	3.84	4.80	6.60	7.92	24	7.20	8.88	12.12	14.64
14	4.20	5.16	7.08	8.52	30	9.00	11.16	15.24	18.24
15	4.44	5.52	7.56	9.12	36	10.80	13.44	18.24	21.96
16	4.80	5.88	8.16	9.72	48	14.52	18.00	24.36	29.16
17	5.04	6.24	8.64	10.32	60	18.12	22.56	30.48	36.48
18	5.40	6.60	9.12	10.92	72	21.84	27.12	36.48	43.80

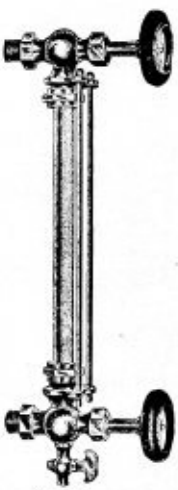
Lengths not regular, charged the price of next longer tubes of same diameter.

CHESTERTON'S GAUGE GLASS CUTTERS

Each.....$2.00

WATER GAUGES

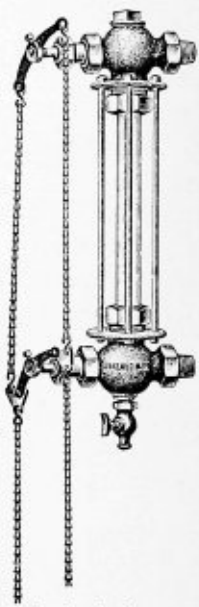
No. 1
With Two Rods



No. 1A
With Two Rods

No. 2
With Four Guards

No. 3
With Four Guards



Lunkenheimer
Quick Closing

No.	Wheel	Size Glass	Size Pipe	Each
1	Iron	⅝ x 12	½	$3.25
1½	Wood	⅝ x 12	½	5.75
2	"	⅝ x 12	½	7.00
3	"	¾ x 16	¾	10.00

No. 3 is so constructed that by removing top cap a new glass can be put in while under steam pressure.

Lunkenheimer Quick Closing.....inch	½-in. Glass ½ " Pipe	⅝-in. Glass ½ " Pipe	¾-in. Glass ¾ " Pipe
Part Finished, Three-rod.....each	$10.50	$11.50	$13.50
All Finished, Three-rod..... "	13.00	14.00	16.50

GAUGE COCKS

BRASS

COMPRESSION

No. 732

Size, Chased Iron Pipe.....inch,	½	¾
Each.....	$1.20	1.35

COMPRESSION—WITH STUFFING BOX

No. 734

Size, Chased Iron Pipe.....inch,	⅜	½	¾
Each.....	$1.20	1.30	1.45

COMPRESSION—WITH STUFFING BOX

No. 736

Size, Chased Iron Pipe.....inch,	½	¾
Each.....	$1.50	1.70

MISSISSIPPI

Size, Chased Iron Pipe..inch,	⅜	½		¾
Blank Shank..... "	⅝	¾	⅞	1
Each.....	$0.90	1.20	1.50	1.80

LUNKENHEIMER SELF-GRINDING ROTATING

Brass

Short Shank with Lever

Size.....inch,	½	¾
Each.....	$2.50	2.50

Long Shank with Lever

Size.....inch,	½	¾
Each.....	$2.50	2.50

LUNKENHEIMER "EXCELSIOR" PLAIN PATTERN GAUGE COCK

For Working Pressures up to 300 Pounds

This plain Pattern Gauge Cock has all the advantages of the "Excelsior," excepting that it is not provided with the emergency valve. Chain for operating is not furnished unless specially ordered. The additional charge will depend on the length of chain wanted.

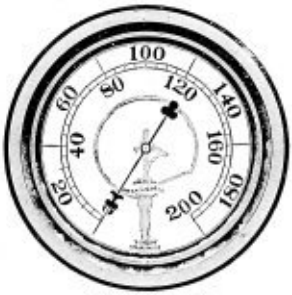
"Excelsior" Gauge Cock without Emergency Valve, ½ or ¾ inch.....each $4.50

THE MICHIGAN "REGESTER"

Iron Pipe Thread.....inch	⅜	½	¾
Each.....	$0.50	55	.60

Single Tube

Double Tube, Anti-freezing



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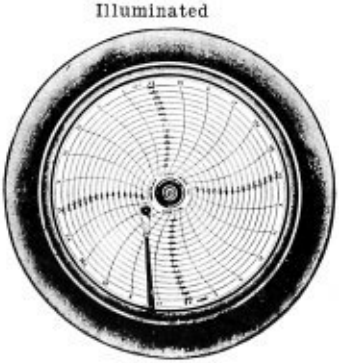


American

Iron Pipe.....each $0.50

STEAM GAUGES

With Cock — Vacuum Gauges same List

SINGLE TUBE

Size	Iron Case Brass Ring Each	Iron Case N. P. Ring Each	Brass Case Each	N. P. Case Each	Brass Deep Case, O. G. or Oct. Ring Each	N. P. Deep Case, O. G. or Oct. Ring Each
24 inch Dial	$200.00	$206.00	$260.00	$280.00	.....	.....
20 " "	135.00	140.00	190.00	205.00	.....	.....
18 " "	110.00	113.00	155.00	167.50	.....	.....
16 " "	90.00	92.00	125.00	135.00	.....	.....
14 " "	75.00	76.50	100.00	107.50	.....	.....
12 " "	50.00	51.50	75.00	79.00	$80.00	$84.00
10 " "	32.00	33.00	40.00	43.00	44.00	47.00
8½ " "	22.00	22.75	30.00	32.50	33.50	36.00
6¾ " "	16.00	16.60	20.00	22.00	23.00	25.00
6 " "	13.00	13.50	16.00	17.50	18.50	20.00
5½ " "	10.00	10.25	12.00	13.25	13.75	15.00
5 " "	8.00	8.20	11.00	12.00	12.50	13.50
4½ " "	8.00	8.20	10.00	11.00	11.50	12.50
3½ " "	7.00	7.18	9.00	9.75	10.25	11.00
3 " "	6.00	6.15	8.00	8.60	9.25	9.75
2½ " "	6.00	6.15	8.00	8.60	9.25	9.75
2 " "	6.00	6.15	8.00	8.60	9.25	9.75

DOUBLE TUBE

Size	Iron Case Japanned Each	Iron Case N. P. Ring Each	Brass Case Each	N. P. Case Each	Brass Deep Case, O. G. or Oct. Ring Each	N. P. Deep Case, O. G. or Oct. Ring Each
24 inch Dial	$230.00	$236.00	$280.00	$300.00	.....	.....
20 " "	155.00	160.00	200.00	215.00	.....	.....
18 " "	125.00	128.00	170.00	182.50	.....	.....
16 " "	105.00	107.00	140.00	150.00	.....	.....
14 " "	90.00	91.50	115.00	122.50	.....	.....
12 " "	55.00	56.50	80.00	84.00	$85.00	$89.00
10 " "	37.00	38.00	45.00	48.00	49.00	52.00
8½ " "	25.00	25.75	34.00	36.50	37.50	40.00
6¾ " "	18.00	18.60	22.00	24.00	25.00	27.00
6 " "	15.00	15.50	18.00	19.50	20.75	22.25
5½ " "	12.00	12.25	14.00	15.25	16.25	17.50
5 " "	11.00	11.20	13.00	14.00	15.00	16.00
4½ " "	10.00	10.20	12.00	13.00	13.75	14.75

Illuminated Dial Gauge — Same List as Steam Gauges

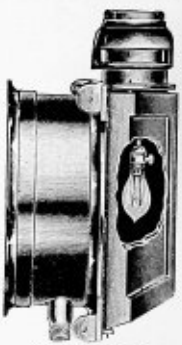
THE AMERICAN RECORDING GAUGE

With Cock

The above gauge is designed to correctly record any variation of pressure during the day or night. The chart is rotated by a special clock movement, designed especially for this work.

The new fountain pen, which we furnish with the recording gauges, is far superior to the Hod pen and other ink recording attachments used in other makes of recording gauges. A special Red Ink is furnished for this pen, the ordinary ink will not flow properly. This gauge can be furnished with high and low alarm at slight additional expense.

Size	Iron Case, N. P. Ring, Each	Brass Case Shallow, Each	Brass Case Deep, Each
6¾ inch Dial.....	$36.00	$40.00	$45.00
8½ " "	44.00	50.00	55.00
10 " "	58.00	65.00	72.00
12 " "	76.00	85.00	95.00



Illuminated

One year's supply of charts, one bottle of ink, and filler, are furnished with every instrument. Nickel-plated gauges are furnished for same price as brass.

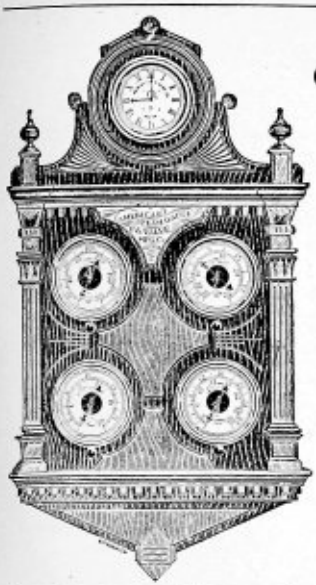
SYPHONS FOR STEAM GAUGE

Brass Bulb

Polished Brass.....each $1.00
Nickel Plated..... " 1.50

Brass Bulb with Cock

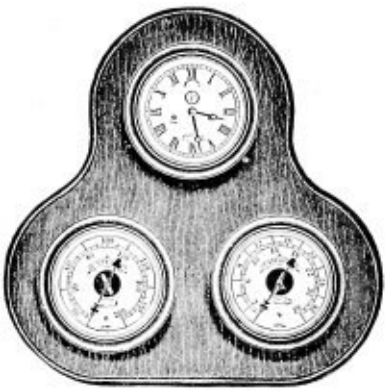
Polished Brass.....each $1.50
Nickel Plated..... " 2.00



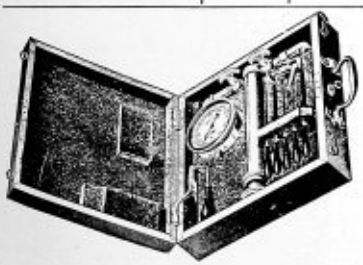
GAUGE BOARDS OR FRAMES

FOR SETS OF INSTRUMENTS

In Black Walnut, Cherry, Mahogany, or Oak



Instruments	Clover Leaf Design Each	Square Design Each	Instruments	Clover Leaf Design Each	Square Design Each	Instruments	Clover Leaf Design Each	Square Design Each
For two 6 inch.....	$8.00	.....	For five 6¾ inch...	$25.00	$35.00	For four 10 inch....	$30.00	$40.00
" three 6 "	13.00	.....	" seven 6¾ " ...	.....	45.00	" five 10 " ...	35.00	52.00
" four 6 "	16.00	$22.00	" two 8½ " ...	15.00	.....	" seven 10 "	.....	70.00
" five 6 "	20.00	30.00	" three 8½ " ...	20.00	.....	" two 12 "	20.00	.....
" seven 6 "	.....	40.00	" four 8½ " ...	25.00	33.00	" three 12 "	25.00	.....
" two 6¾ "	13.00	.....	" five 8½ " ...	30.00	42.00	" four 12 "	32.00	48.00
" three 6¾ "	15.00	.....	" seven 8½ " ..	.....	55.00	" five 12 "	38.00	60.00
" four 6¾ "	20.00	27.00	" two 10 " ...	18.00	.....	" seven 12 "	.....	80.00
			" three 10 " ...	22.00	.....			



INSPECTORS' OUTFIT

This outfit is specially adapted for steam-boiler inspectors. It is furnished in polished mahogany, velvet-lined case.

It consists of:

One No. 3 Nickel-plated Test Pump.
" 3 inch or 3½ inch Nickel-plated Standard Test Gauge.
" Hand Puller.
" " Set.
" pair Pliers.
" Screw Driver.
Broaches and Files.

Each.....$40.00

SQUARE CASE REVOLUTION COUNTER

For Engines, Pumps, Grain Scales, Etc.

COUNTERS IN SQUARE METAL CASES

Large Size

4 figs. counting	10,000,	in cases,	7x2½	inches,	Each,	$20.00
5 " "	100,000,	"	8x2½	"	"	24.00
6 " "	1,000,000,	"	9x2½	"	"	28.00
7 " "	10,000,000,	"	10x2½	"	"	32.00

Small Size

4 figs. counting	10,000,	in cases,	4¼x1¾	in.,	Each,	$17.50
5 " "	100,000,	"	5 x1¾	"	"	20.00
6 " "	1,000,000,	"	5½x1¾	"	"	24.00
7 " "	10,000,000,	"	6 x1¾	"	"	28.00

The same with resetting attachment, each, extra, $4.00.

REVOLUTION COUNTER

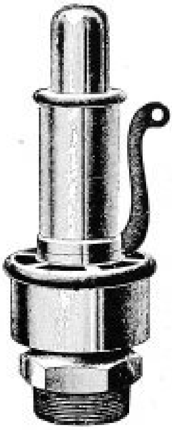
It can be operated by either a reciprocating or continuous rotary motion, counting ahead which ever way the shaft revolves.

It works equally as well on pumps where the length of stroke varies, in which case the counter-crank should be adjusted for the shortest stroke.

The case is similar in style to that used on our standard gauges.

ROUND CASES

Size						Brass Case	N. P., O. G. or Oct. Ring
12	inch Dial,	8	Wheels,	Each		$110.00	$114.00
10	" "	8	"	"		95.00	98.00
8½	" "	8	"	"		80.00	82.50
12	" "	6	"	"		100.00	104.00
10	" "	6	"	"		85.00	88.00
8½	" "	6	"	"		70.00	72.50
6¾	" "	6	"	"		60.00	62.00
6	" "	6	"	"		50.00	52.00



SAFETY VALVES

THE AMERICAN PORTABLE POP SAFETY VALVE

All Bronze

Size	¼ or ¾ inch	1 inch	1¼ inch	1½ inch	2 inch	2½ inch	3 inch	3½ inch	4 inch	5 inch	6 inch
Each	$10.	$12.	$15.	$20.	$30.	$55.	$100.	$125.	$160.	$240.	$350.
Est. Wgt. (lbs.)	1½	2	3	4	5	12	20	28	33	50	63
For Boilers, H. P.	3 to 6	3 to 10	10 to 20	20 to 30	30 to 40	40 to 75	75 to 100	100 to 125	125 to 150	150 to 175	175 to 200

Flanged connection furnished at an additional cost

THE AMERICAN SIDE OUTLET POP SAFETY VALVE

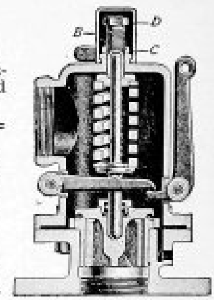
For Marine and Stationary Boilers

Size	½ or ¾ inch	1 inch	1¼ inch	1½ inch	2 inch	2½ inch	3 inch	3½ inch	4 inch
Each	$10.	$12.	$15.	$20.	$30.	$55.	$100.	$125.	$160.
App. Wgt. (lbs.)	1¼	2¼	3¾	5	7½	14	22	27½	35

THE AMERICAN POP SAFETY VALVE

For Stationary and Marine Boilers

Fitted with American adjustable blow-down ring, iron case and best steam metal. This valve is furnished with flat seats for stationary boilers, and with beveled seats at an angle of 45 degrees for marine boilers.



Size	2 inch	2½ inch	3 inch	3½ inch	4 inch	4½ inch	5 inch	5½ inch	6 inch
Price Bronze Seat	$45.	$55.	$65.	$85.	$100.	$125.	$150.	$180.	$225.
" Nickel "	50.	62.	75.	98.	115.	142.	170.	205.	255.
For Boilers, H. P.	30 to 40	40 to 75	75 to 100	100 to 125	125 to 150	150 to 175	175 to 200	200 to 225	225 and up
Est. Wgt., Scrd, (lbs.)	23	36	49	67	87	96	114	134	157
" " Flgd. "	30	44	60	80	102	113	128	158	172

No. 150
Rough Body

No. 151
Finished body
Indicator Connection

No. 150 A
Top Lever
Cylinder Relief

THE AMERICAN CYLINDER RELIEF AND SNIFTING VALVE

For Steam, Water and Air

These valves are used on the ends of the cylinders of steam engines and remove all danger of blowing out cylinder heads by accumulation of water in the cylinder.

The valve will be furnished with hand wheel for adjusting pressure, when desired.

THE AMERICAN WATER RELIEF VALVE

In ordering state pressure to be carried.

Valves from two inches upward are made either with screwed or flanged bottom.

If flange is desired, state diameter when ordering.

Brass

Iron

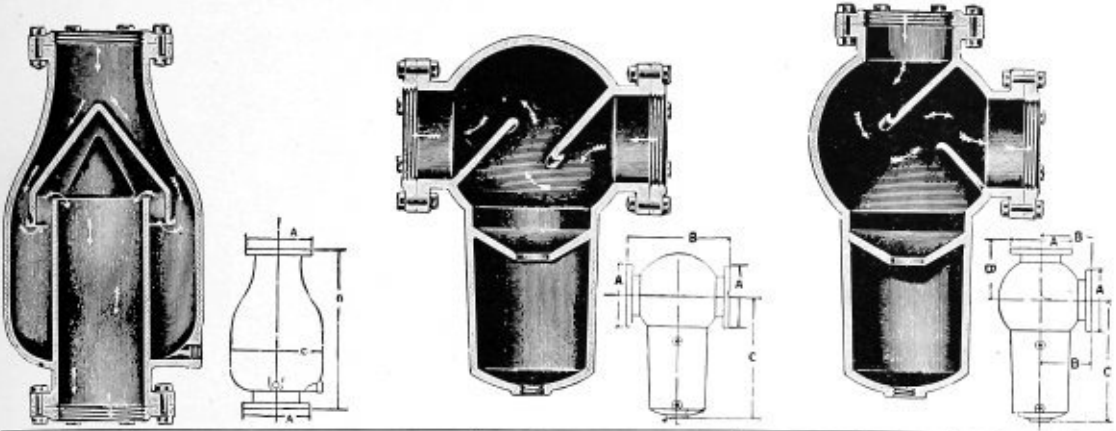
No. 150, 150A

Size	¾ inch	1 inch	1¼ inch	1½ inch	2 inch	2½ inch	3 inch	3½ inch	4 inch
Price, Rough Body	$10.00	$12.00	$15.00	$20.00	$30.00	$50.00	$90.00	$110.00	$160.00
" Finished "	12.00	15.00	18.50	25.00	36.50	58.50	110.00	130.00	190.00
" Nickel "	13.50	17.00	21.00	28.00	40.00	63.50	124.00	140.00	210.00
No. 151									
Price, Rough Body	11.00	13.00	16.50	22.50	34.00	55.00	102.00	124.00	176.00
" Finished "	14.00	17.00	21.50	28.50	42.00	65.00	124.00	160.00	210.00
" Nickel "	15.50	19.00	24.00	31.50	46.00	70.50	130.00	168.00	232.00

AMERICAN WATER RELIEF VALVE

Size of Valve	½ inch	¾ inch	1 inch	1¼ inch	1½ inch	2 inch	2½ inch	3 inch	3½ inch	4 inch
Brass each	$10.	$10.	$12.	$15.	$20.	$40.	$65.	$90.	$125.	$160.
Size of Valve	2 inch	2½ inch	3 inch	3½ inch	4 inch	5 inch	6 inch	8 inch	10 inch	12 inch
Iron each	$45.	$55.	$65.	$85.	$100.	$150.	$225.	$400.	$800.	$1200.

GARDNER STEAM SEPARATORS



Size Inches	Each	VERTICAL SEPARATOR					HORIZONTAL SEPARATOR			ANGLE SEPARATOR			HORIZONTAL AND ANGLE	
		Weight	Dimensions A	Dimensions B	Dimensions C	Size of Drain	Dimensions A	Dimensions B	Dimensions C	Dimensions A	Dimensions B	Dimensions C	Size of Drain	Weight
2	$40.00	60	7	14⅛	8	½	6	10	12⅛	7	5	12⅛	½	61
2½	45.00	75	7	14½	8	½	7	10	12⅛	6	5	12⅛	½	66
3	50.00	115	8½	17⅛	10	¾	7½	12	15⅛	7½	6	15⅛	¾	98
3½	60.00	117	8½	17½	10	¾	8½	12	15⅛	8½	6	15⅛	¾	110
4	70.00	188	9¼	21	12	1	9	14	16½	9	7	16½	1	152
4½	75.00	192	9¼	21	12	1	9¼	14	16½	9¼	7	16½	1	155
5	80.00	220	11	25	15½	1	10	15	19	10	7½	19	1¼	200
6	110.00	315	11	25	15½	1	11	18	21	11	9	21	1¼	300
7	125.00	450	13½	32	18½	1¼	13½	21	24	13½	10½	24	1½	425
8	160.00	500	13½	32	18½	1¼	13½	24	24	13½	10½	24	1½	450
9	180.00	950	16	39½	24¾	1½	15	24	26¾	15	12	26¾	1½	900
10	220.00	1,000	16	39½	24¾	1½	16	27	30	16	13½	30	2	955
12	250.00	1,100	19	47	32½	2	19	28	32	19	14	32	2	1,050
14	300.00	1,350	21	55	40	2	21	30	36	21	15	36	2	1,250

FISHER PUMP GOVERNOR

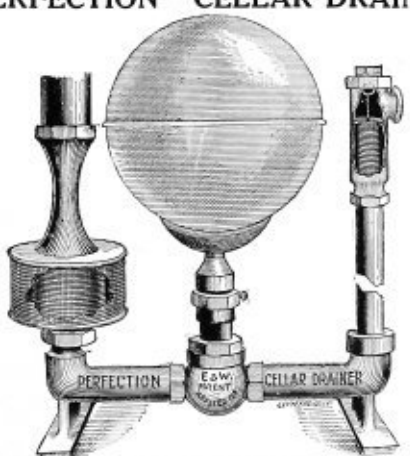
SCREWED

½	inch.....each	$25.00
¾	" ..... "	27.50
1	" ..... "	30.00
1¼	" ..... "	35.00
1½	" ..... "	42.50
2	" ..... "	50.00
2½	" ..... "	58.00
3	" ..... "	70.00

FLANGED

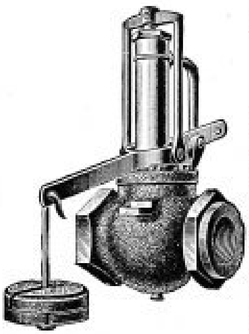
1½	inch .. ....each	$45.00
2	" ..... "	50.00
2½	" ..... "	60.00
3	" ..... "	75.00
3½	" ..... "	87.50
4	" ..... "	100.00
5	" ..... "	125.00
6	" ..... "	150.00
8	" ..... "	225.00

"PERFECTION" CELLAR DRAINER



No.	Pipe Connec'ns Inlet inches	Pipe Connec'ns Disch'ge inches	Gals. Disch'd per H'r	Weight lbs.	DIMENSIONS, CAPACITY OF AUTOMATIC Each	UNAUTOMATIC Each
1	¾	1	400	19	$20.00	$12.00
2	¾	1½	800	22	25.00	16.00
3	1	2	1500	28	30.00	20.00

Dimensions: 18 inches long, 12 inches wide, 20 inches high



No. 1

THE DAVIS PRESSURE REGULATOR

Suitable for any Initial Pressure up to 200 Pounds

Sizes 1¼ inch and less have bronze bodies; 1½ inch and over are made of iron; 1½ inch and less have screwed ends only; 2 inch to 6 inch, inclusive, have either screwed or flanged ends; 7 inch and over have flanged ends only. Unless otherwise ordered, screwed end valves are sent on orders for sizes less than 6 inch.

It has no diaphragms, springs, or complicated parts to get out of order, and having full pipe openings, requires no by-pass.

No. 1 is designed for all purposes where there is no pulsation of pressure, viz.: steam heating, boiling, drying, distilling, and all places requiring a constant, unvarying pressure below that of boiler.

No. 2 is the same as No. 1, with the addition of oil cylinder or dash pot, and is to be used where there is vibration or pulsation of pressure, as in the steam pipe of engine or pump when valves are opened or closed, and in steam heating systems, caused by exhaust from engines, pumps, steam elevators, etc.

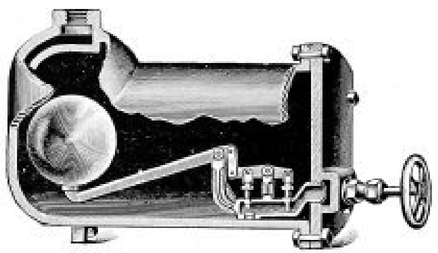
In ordering, state boiler pressure that is carried, purpose to be used for, and what pressure want to reduce to.

No. 2

Size, inches	½	¾	1	1¼	1½	2	2½	3	4	5	6	7	8	10
No. 1, each	$20.00	$20.00	$22.00	$24.00	$25.00	$30.00	$35.00	$40.00	$60.00	$75.00	$100.00	$135.00	$175.00	$275.00
No. 2, "	25.00	25.00	27.00	29.00	30.00	36.00	42.00	48.00	70.00	90.00	120.00	160.00	200.00	300.00

DAVIS STEAM TRAP

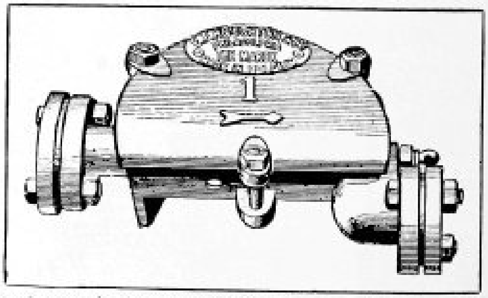
Suitable for any Working Pressure up to 200 Pounds



No.	Each	Capacity 1 inch pipe	Capacity Square Feet Radiating Surface	Size Inlet and Outlet Inches
00	$15.00	1,500	500	½
0	20.00	3,000	1,000	¾
1	30.00	6,500	2,175	1
2	45.00	15,000	5,000	1¼
3	60.00	20,000	6,675	1½
4	80.00	30,000	10,000	2
5	100.00	40,000	13,350	2½
6	125.00	60,000	20,000	3

"MARCK" STEAM TRAP

The "Marck" Trap is merely an automatic valve. It opens and closes of itself. It is always open at a temperature below 212 degrees Fahr. It is not a return trap, nor will it work against pressure. It works entirely by temperature, and it makes no difference how the temperature gets to it. Consequently it should not be placed directly over live steam pipes, over boilers, in reservoirs, or retorts at a high temperature, but should always be placed where the temperature will readily fall to below 212 degrees Fahr. when there is water or condensed steam in the pipes leading to it.



The trap should, of course, always be at the lowest point to be drained. It can be placed in almost any position, but care should be taken to see that the inlet pipe is connected to the inlet and not to the outlet, or, in other words, the condense flows through the traps in the direction indicated by the arrows on the cover of the trap. It should not be placed with the curve or semi-circle down, for in that instance the semi-circle would collect water and freeze.

These traps require a little adjustment. This is done by turning the regulating screw ⅛ of a turn to the right, if the trap does not shut off, that is, if it continues to blow live steam; and ⅛ of a turn to the left, if it does not open and give a free flow of water, providing the temperature is reduced to a point where it should. This ⅛ of a turn merely regulates the adjusting of the valve.

If ⅛ of a turn does not produce the desired result, then another ⅛ of a turn should be taken in the same direction, but do not take more than ⅛ of a turn at one time.

Size	Size of Pipe Connections Inches	Capacity in feet of 1 inch Pipe According to Radiating Conditions	Each	Length Over All inches	Height inches	Weight lbs.	Size of Valve inches
000	½	175 to 450	$10.00	6½	2½	3	¼
00	¼	175 " 450	8.00	7¾	3	6	1/4
0	⅜	225 " 900	11.00	8½	3¼	6 3/16	⅜
I	½	450 " 2,700	17.00	10½	3¾	11	7/16
II	¾	900 " 5,850	25.00	12	3¾	13 3/16	⅝
III	1	1,800 " 6,750	32.00	14	4¼	20	¾
IV	1¼	2,250 " 10,800	40.00	15½	4½	21 3/16	1
V	1½	4,500 " 16,200	55.00	18	5½	24 3/16	1¼
VI	2	9,000 " 24,300	70.00	21	6	46	1⅜
VII	2	18,000 " 36,000	82.00	24	6	59	1½
VIII	2½	27,000 " 54,000	90.00	25½	6½	69	1¾

GARDNER SPRING GOVERNORS

In Ordering, State Speed Desired to Run

Spring — Class A. Automatic Stop

Size Gov'r. Diam. Open'g.	½	¾	1	1¼	1½
Class B, Plain	$14.00	$16.00	$18.00	$21.00	$25.00
Class B, Finished	16.00	18.00	20.00	24.00	29.00
Class A, Plain	....	....	21.00	24.50	29.50
Class A, Finished	....	....	23.00	27.50	33.50

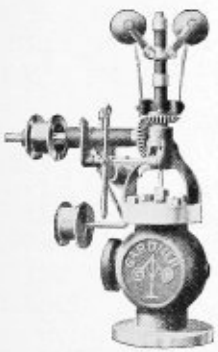
Size Gov'r. Diam. Open'g.	2	2¼	2½	3	3½
Class B, Plain	$30.00	$35.00	$40.00	$50.00	$60.00
Class B, Finished	34.00	40.00	45.00	58.00	69.00
Class A, Plain	36.00	42.00	48.00	59.00	71.00
Class A, Finished	40.00	47.00	53.00	67.00	80.00

Size Gov'r. Diam. Open'g.	4	4½	5	....	....
Class B, Plain	$71.00	$83.00	$94.00	....	....
Class B, Finished	81.00	94.00	106.00	....	....
Class A, Plain	83.00	96.00	109.00	....	....
Class A, Finished	93.00	107.00	121.00	....	....

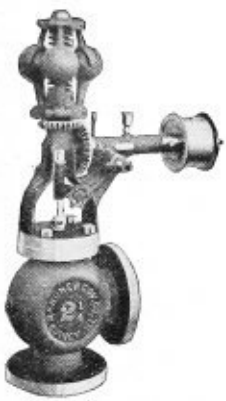
Class B. Without Automatic Stop

Class B is without automatic stop, and Class A is with automatic stop.

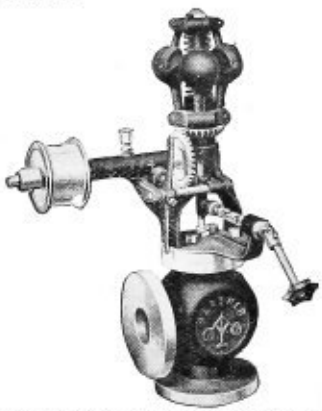
GARDNER WIDE RANGE GOVERNOR



Class A



Class B



With Extension to Speeding Attachment

This Governor permits of a range of speed of 500 per cent without in the least affecting regulation

Size Diam. Opening..	¾	1	1¼	1½	2	2¼	2½	3	3½	4	4½	5	6	7
Class A...each	$18.50	$21.00	$24.50	$29.50	$36.00	$42.00	$48.00	$59.00	$71.00	$83.00	$96.00	$109.00	$140.00	$170.00
Class B... "	16.00	18.00	21.00	25.00	30.00	35.00	40.00	50.00	60.00	71.00	83.00	94.00	122.00	150.00

The extension to speeding attachment, shown in cut, is not furnished except when especially ordered and then only at an additional expense.

The Standard Wide-Range Governor is adjusted to give a speed variation of 100 per cent. When a greater range is wanted it should be specified in ordering, for special adjustments will be required, necessitating an extra charge.

THE BENBOY EXHAUST HEAD

For End of Pipe Above Roof

Size of Exhaust Pipe inches	Each	Size of Exhaust Pipe inches	Each
1 to 1½	$20.00	10	$125.00
2 or 2½	25.00	12	150.00
3 " 3½	30.00	13	175.00
4 " 4½	40.00	14	200.00
5	50.00	15	235.00
6	60.00	16	250.00
7	75.00	17	270.00
8	90.00	18	300.00
9	105.00	..	.....

RELIANCE SAFETY WATER COLUMNS

Low Water Alarm

Combined High and Low Water Alarm

COMBINED HIGH AND LOW WATER ALARMS					GENERAL DIMENSIONS								
Size of Column No.	Kind and Size of Boiler in.	Variation Between Alarms, in.	Japanned Columns Each	Water Gauge and Gauge Cocks Each	Steam and Water Connections, in.	Blow off in.	Water Gauge in.	Gauge Glass in.	Gauge Cocks Centers in.	Gauge Cocks Size in.	Center of Water Connection to Top of Column in.	Diameter of Column in.	Length over all in.
1	36 to 54	6	$28.00	$7.00	1	½	½x14	⅝x12	3	½	16	3¾	23¼
1½	36 " 54	6	28.00	7.00	1¼	¾	½x14	⅝x12	3	½	19¾	5	28¼
5	54 " 72	8	30.00	10.00	1¼	¾	¾x18	¾x16	4	¾	20½	4¼	29½
7	Water Tube	12	35.00	10.00	1½	¾	¾x21	¾x19	6	¾	26	5¼	36
9	Vertical	18	40.00	10.00	1½	1	¾x26½	¾x24	9	¾	33½	5¼	44
11	"	24	42.50	12.50	1½	1	¾x32½	¾x30	12	¾	37¾	5	48
13	"	30	45.00	*20.00	1½	1	¾x38½	*¾x36	10	¾	52½	5	64
15	"	36	50.00	*20.00	1½	1	¾x44½	*¾x42	12	¾	58½	5	70
LOW WATER ALARMS					GENERAL DIMENSIONS								
2	36 to 54	..	$25.00	$7.00	1	½	½x14	⅝x12	3	½	16	3¾	23¼
6	54 " 72	..	28.00	10.00	1¼	¾	¾x16	¾x14	4	¾	18¼	4¼	27¼
8	Vertical	..	35.00	10.00	1½	¾	¾x21	¾x19	6	¾	26	5¼	36

*Two glasses joined at center with stuffing box. Four gauge cocks.

COMBINATION WATER AND STEAM GAUGE

DIMENSIONS OF COMBINATION BODIES

Number	1	2	3	4
Center to Center of Boiler Connections.....in.	10	12½	14	18
Center to Center of Water Gauge Connections..... "	10	12½	14	18
Center to Center of Gauge Cocks..... "	3⅜	3¾	4½	4
Extreme Length..... "	13	16½	18¾	22½
Tapped for Boiler Connections..... "	½	¾	1	1¼
Tapped for Water Gauge Connections..... "	½	½	¾	¾
Tapped for Gauge Cocks..... "	⅜	½	½	¾
Top and Bottom Tapped..... "	½	½	¾	1¼

Number	1	2	3	4
Price, No. 640, Bodies only, Painted and Tapped...each	$2.75	4.00	6.00	8.00

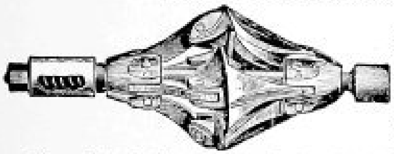
FLUE CLEANERS

Be sure and run rod through large hole in rear end of cleaner and screw into the other end.

Ruggles Perfection

2 inch and smaller	each	$2.00
2½ " to 4 inch	per inch	1.00
4½ "	each	5.00
5 "	"	6.00

THE "INGALLS" SELF ADJUSTING TUBE SCRAPER



The Spring acts equally on each scraping arm and is protected from the heat and dirt. The scraping edges are chilled and are more durable than steel.

Sizes: 1½, 2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾, 4 and 4½ inch, $1.00 per inch.

BUTMAN PAT. FLUE CLEANER ROD

This Rod is made of white ash, 1½ inches in diameter; sockets and joints of malleable iron, and connecting balls of drop forged steel. It will fold in any direction, cannot kink, saves labor and fuel, as well as fireman's hands.

The socket in first section is tapped to receive ⅜ inch pipe.

Class B is recommended where there is plenty of room in front of boiler, and Classes A and C where space is more limited.

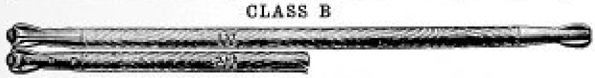
Any style of brush or scraper may be employed. Special rods of any number of joints made to order.

Order by number and give diameter and length of tubes.

CLASS A

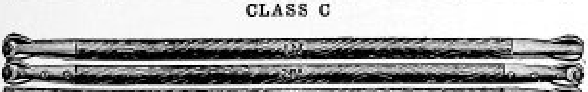
No.	Length 1st Section	Length 2d Section	Length Over All	Price
1	6 ft. 6 in.	6 ft. 6 in.	13 ft.	$5.76
2	5 " 6 "	5 " 6 "	11 "	5.60
3	4 " 6 "	4 " 6 "	9 "	5.44

CLASS B

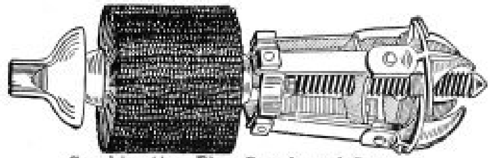


No.	Length 1st Section	Length 2d Section	Length Over All	Price
4	15 ft.	6 ft.	21 ft.	$6.40
5	13 "	6 "	19 "	6.24
6	11 "	6 "	17 "	6.08
7	10 "	5 "	15 "	5.90
8	8 "	5 "	13 "	5.76

CLASS C

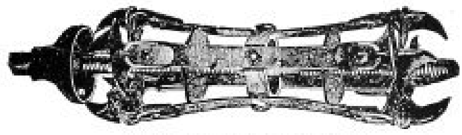


No.	Length 1st Section	Length 2d Section	Length 3d Section	Length Over All	Price
9	7 ft.	7 ft.	7 ft.	21 ft.	$8.40
10	6 " 4 in.	6 " 4 in.	6 " 4 in.	19 "	8.24
11	5 " 8 "	5 " 8 "	5 " 8 "	17 "	8.08
12	5 "	5 "	5 "	15 "	7.92
13	4 " 4 "	4 " 4 "	4 " 4 "	13 "	7.76
14	3 " 8 "	3 " 8 "	3 " 8 "	11 "	7.60
15	3 "	3 "	3 "	9 "	7.44



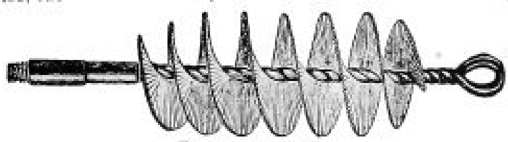
Combination Flue Brush and Scraper

Sizes 2 to 6 inches. .... per inch $1.00



The Engineers' Favorite

Size, inches	1½	1¾	2	2¼	2½	2¾	3
Price, each	$2.00	2.00	2.00	2.25	2.50	2.75	3.00
Size, inches	3¼	3½	3¾	4	4½	5	6
Price, each	$3.25	3.50	3.75	4.00	4.50	5.00	6.00



Flat Steel Wire

Size, inches	1	1¼	1½	1¾	2	2¼	2½	2¾
Price, each	$1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75
Size, inches	3	3½	4	4½	5	5½	6	
Price, each	$3.00	3.50	4.00	4.50	5.00	5.50	6.00	

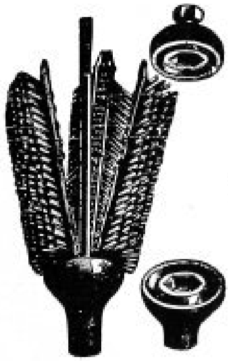
STEAM FLUE BLOWER

Red Jacket

FOR HORIZONTAL BOILERS

No. of Blower	Size of Tubes Outside Diam. inches	Price With Clamps and Nipple	4-ply Steam Hose per foot	
0	1¼ to 1¾	$5.00	½	$0.51
1	2 " 2¼	5.00	½	.51
2	2½ " 2¾	6.25	¾	.67
3	3 " 3¼	7.50	1	.83
4	3½ " 3¾	8.75	1	.83
5	4 " 4½	10.00	1¼	1.04
6	5 " 6	12.50	1¼	1.04

EXPANSION FLUE BRUSH

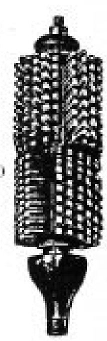


MALLEABLE IRON

AND

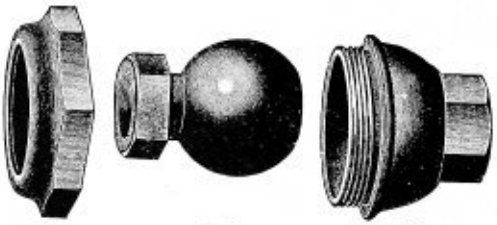
TEMPERED STEEL

Price, per inch....$1.00



THE MORAN FLEXIBLE JOINT

SIMPLE, EFFICIENT, DURABLE

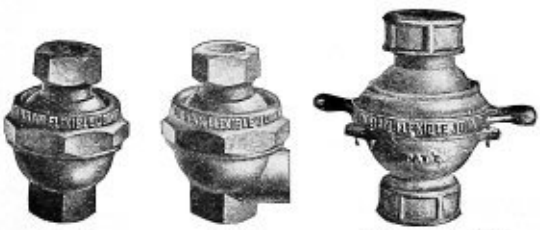


Ring Ball Bell

Only three parts. No packing. No Spring. Always reseating. Loose until pressure is applied.

FOR STEAM AIR AND GAS

SPECIAL LIQUID JOINT



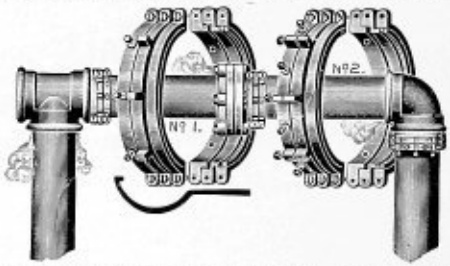
No. 1 No. 2 No. 3 — LIQUID

	No. 1 & 3 Straight	No. 2 Angle
⅛ inch, Standard Thread	$2.75	$3.00
¼ " " "	3.00	3.25
⅜ " " "	3.00	3.25
½ " " "	3.25	3.50
¾ " " "	3.75	4.00
1 " " "	4.25	4.50
1¼ " " "	5.25	5.50
1½ " " "	6.00	6.25
2 " " "	7.50	8.75
2½ " " "	9.00	10.50
3 " " "	11.25	12.25
3½ " " "	14.00	15.50
4 " " "	15.00	16.75
4½ " " "	18.75	20.75
5 " " "	18.75	20.75
6 " " "	25.60	27.50
7 " Threaded or Flanged	50.00	55.00
8 " " "	75.00	82.50
9 " " "	95.00	104.50
10 " " "	115.00	126.50

Larger sizes furnished for either hub and spigot Flanged or Threaded Connections. In ordering, please state whether steam, air or liquid is to be conveyed, and under what pressure.

Prices given for same on application.

CLIMAX STEAM JOINT CLAMP



A Permanent Repair for Pipe Joints. Made of Brass for all Sizes of Pipe

No. 1 Clamps for all sizes 6 inches and smaller.
No. 2 Clamps for all sizes 7 inches and larger.

Size Pipe Inside Dia. inches	½	¾	1	1¼	1½	2	2½	3	3½
Each	$1.50	1.50	1.50	1.90	2.25	3.00	3.75	4.50	5.25
Size Pipe Inside Dia. inches	4	4½	5	6	7	8	9	10	12
Each	$6.00	6.75	7.50	9.00	10.50	13.00	15.75	18.75	22.50

EMERGENCY PIPE CLAMP

MALLEABLE IRON. COMPLETE WITH PACKING READY FOR USE

To Repair Splits and Rust Holes in Pipes

This is the most convenient and practical repair ever placed on the market for splits and rust holes in pipe; it is so simple that any one with a small wrench can attach it in a few minutes.

Size of Pipe....in.	½	¾	1	1¼	1½	2	2½	3	3½
Length over all, in.	3⅛	3¼	3½	3⅝	4	4¼	4½	5	5½
Each	$.40	.45	.50	.60	.70	.80	1.00	1.25	1.50
Size of Pipe,....in.	4	4½	5	6	7	8	9	10	12
Length over all, in.	6	6½	7	8	9	9¼	10	11	12
Each	$2.00	4.50	5.00	6.00	7.00	8.00	9.00	10.00	12.00

MOUND IMPROVED SCRAPING TOOLS

For Scraping Valves, Babbitt Metal, Journals, Bearings, etc.

There are six Scrapers, as shown in the cut, in each set. They vary in size from 8 to 14 inches.

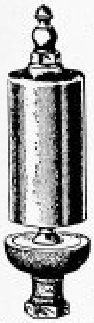
The scrapers are made of the best tool steel, carefully forged, tempered and polished.

No. 1. Set of 6 Scraping wools, in oak case.....$2.50
No. 2. Set of 6 Mound "Special" Hollow Ground Scraping Tools in oak case.....$3.50

STEAM WHISTLE

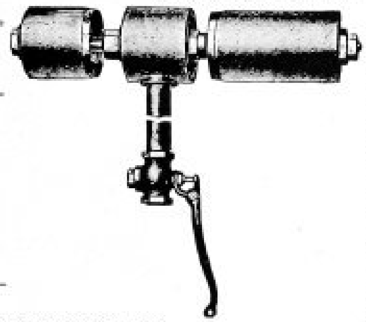
COMMON BRASS

With Valve


Without Valve

Diam. of Bell inches	Length of Bell inches	Size of Pipe inches	Each without Valve	Each with Side Valve
1	2½	¼	$2.20	$3.10
1¼	3	⅜	2.75	3.75
1½	3¼	⅜	3.00	4.00
2	4	¾	4.35	5.50
2½	4½	¾	5.25	6.50
3	5	1	7.25	8.50
3½	5¾	1	9.50	11.50
4	6½	1¼	12.00	15.00
5	8	1½	19.00	22.50
6	9½	2	24.00	33.00
8	14	2½	70.00	95.00

PATENT GONG WHISTLE

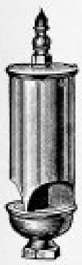


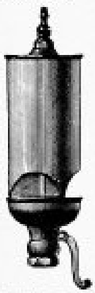
It is made all of iron and will last forever.

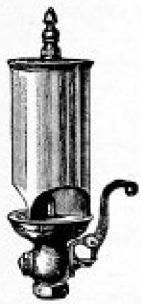
It makes an entirely different sound from an ordinary whistle. It can be distinctly heard from six to eight miles.

Diam. of Gong	Price	Size of Steam Inlet
4 in.	$12.00	1¼ in.
6 "	14.00	1½ "
8 "	20.00	2 "
10 "	30.00	2½ "

PATENT SINGLE BELL CHIME


No. 1, Without Valve


No. 2, With Upright Valve


No. 3, With Side Valve

The peculiar method of this whistle consists in producing three distinct tones pitched to the first, third and fifth of the common musical scale, which harmonize and give an agreeable musical chord.

No. 3 style of this whistle, in sizes 5 to 12 inches, both inclusive, have renewable seats, such as are used in the Crosby Spring-seat Valve.

Diam. of Bell inches	Size of Steam Pipe, inches	No. 1	No. 2	No. 3
1½	⅜	$4.50	......	$6.00
2	½	5.00	......	8.00
3	¾	9.50	......	14.00
4	1	15.00	$20.00	20.00
5	1¼	28.00	35.00	35.00
6	1½	42.00	50.00	50.00
8	2	95.00	......	110.00
10	2½	190.00	......	210.00
12	3	280.00	......	300.00

LUNKENHEIMER'S MOCKING-BIRD WHISTLE—All Brass, with Valve

A simple and practical variable sound steam whistle alarm. Attached like any ordinary whistle.

Diameter of Bells........inches Size of Pipe Connection "	2½ ¾	3 ¾	3½ 1	4 1¼	5 1½	6 1½
All Brass, with Valve......each	$10.50	$14.00	$20.00	$28.00	$40.00	$56.00
" " without " "	9.00	12.00	17.50	25.00	37.00	50.00
Iron Base, " " "	......	11.50	16.50	23.00	34.00	46.00

Mocking-Bird

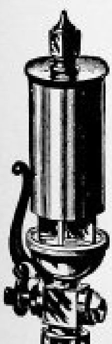
LUKENHEIMER IMPROVED COMBINATION OR FIRE ALARM WHISTLE (Patented)
All Brass or Iron Base Brass Bell—Complete with Valve

This whistle is designed to answer the purpose of an ordinary whistle as well as that of a fire alarm. Thousands are in use for fire alarm signal purposes in towns and villages throughout the world. It is provided with a piston that can be moved up or down within the bell or tube, thus changing the interior length of same, and consequently the sound of the whistle. When the piston is not operated, the whistle gives but a single note, like any ordinary whistle, but when the piston is moved up or down, a howling, penetrating noise is produced. When placed above the roof of a building, an extension rod should be coupled to the piston stem, and a rope or wire to the whistle valve lever.

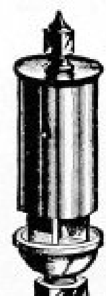
Fire Alarm

Diameter of Bell......inches Size Pipe Connection...... "	2½ ¾	3½ 1	5 1¼	8 2
With Whistle Valve Complete, Iron Base......each	......	$31.00	$40.00	$100.00
With Whistle Valve Complete, Brass Base...... "	24.00	40.00	53.00	120.00
Without Valve. Iron Base...... "	22.00	28.00	37.00	95.00

FRISBIE PATENT SINGLE BELL QUARTET CHIME WHISTLE
For Steam or Air—Four Tones Pitched to a Musical Scale


No. 1, with Valve

A desirable feature is the adjustable bell, which can be raised or lowered to conform to the steam pressure under which the whistle is used. It is well known that a whistle made to blow at a low pressure will become shrill and discordant under high pressure. By the movable bell it can be set at a point to produce a clear, full tone, under any pressure, thus avoiding the disagreeable screeching not uncommon in many whistles. In case the bell by accident becomes damaged, a new tube to replace it can be furnished at small expense.


No. 2 Without Valve

PRICE LIST FOR STEAM

Diameter of Bell......inches Size of Pipe Connection...... "	2 ¼	2½ ½	3 ¾	4 1	5 1¼	6 1½	8 2
No. 1, with Adjustable Lever Valve...each	$7.00	$9.00	$11.00	$18.00	$28.00	$42.00	$100.00
No. 2, without Valve...... "	5.00	7.00	8.00	14.00	22.00	38.00	85.00

PRICE LIST FOR AIR

1½ inch diameter bell, ¼ inch connection without lever for hand air pump	......each	$3.00
2 " " " ½ " " " " " " " " "	...... "	4.00
2½ " " " ½ " " " " " " " " "	...... "	5.00
3 " " " ¾ " " " " " " " " "	...... "	6.50
1½ " " " ¼ " " with " " " " " tank	...... "	4.00
2 " " " ½ " " " " " " " " "	...... "	5.00
2½ " " " ½ " " " " " " " " "	...... "	6.00
3 " " " ¾ " " " " " " " " "	...... "	7.50

LUNKENHEIMER OIL CUPS

"PIONEER" SLIDE-TOP GLASS BODY OIL CUP

Number	000	00	0	1	1½	2	3	4	5	6	8
Extreme Outside Diameter of Cup...inches	1 1/16	1⅜	1½	1¾	2	2 5/16	2 9/16	2¾	3¼	3 13/16	4 5/16
Extreme Height of Cup (over all)...inches	2¾	2 13/16	3 1/16	3⅝	4 1/16	4 5/16	4¾	5⅛	6	7⅛	8⅜
Outside Diameter of Glass... "	1	1⅛	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Glass... "	⅞	1	1⅛	1⅜	1⅝	1⅞	2⅛	2⅝	3	4	5
Capacity...ounces	¼	½	⅝	1	1½	2½	4	5	10	18	34
Shank Pipe Thread...inch	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½	¾
Finished Brass...each	$0.70	$0.75	$0.80	$1.00	$1.25	$1.50	$1.90	$2.40	$3.10	$4.00	$8.50
Nickel-plated... "	.80	.85	.95	1.20	1.50	1.75	2.20	2.75	3.50	4.50	9.50

"ROYAL" SIGHT-FEED GLASS BODY OIL CUP

Number	000	00	0	1	1½	2	3	4	5	6	8
Extreme Outside Diameter of Cup...inches	1⅝	1 7/16	1⅞	1⅞	2⅛	2⅜	2 9/16	2 15/16	3⅝	3 13/16	4 5/16
Extreme Height of Cup (over all)...inches	3	3 5/16	3 13/16	4⅞	4 7/16	4 13/16	5⅝	6	6⅞	7 13/16	9
Outside Diameter of Glass... "	1	1⅛	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Glass... "	⅞	1	1⅛	1⅜	1⅝	1⅞	2⅜	2⅜	3	4	5
Capacity...ounces	¼	½	⅝	1	1½	2½	4	5	10	18	34
Shank Pipe Thread...inch	⅛	⅛	⅛	¼	¼	⅜	⅜	⅜	½	½	¾
Finished Brass...each	$0.95	$1.10	$1.25	$1.50	$1.75	$2.10	$2.55	$3.15	$3.90	$4.80	$10.00
Nickel-plated... "	1.05	1.20	1.40	1.70	2.00	2.35	2.85	3.50	4.30	5.30	12.00

"VICTOR" INDEX GLASS BODY OIL CUP

Number	0	1	1½	2	3	4	5	6	8
Extreme Outside Diameter of Cup (lever included)...inches	2 5/16	2 11/16	2 13/16	3¼	3¾	4	4 11/16	5¼	6¼
Extreme Height of Cup (over all)...inches	3 11/16	4½	4 13/16	5¼	6	6½	7 1/16	8¼	9⅜
Ourside Diameter of Glass. "	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Glass... "	1⅛	1⅜	1⅝	1⅞	2⅛	2⅜	3	4	5
Capacity...ounces	⅝	1	1½	2½	4	5	10	18	34
Shank Pipe Thread...inch	⅛	¼	¼	⅜	⅜	⅜	½	½	¾
Finished Brass...each	$1.00	$1.20	$1.45	$1.75	$2.15	$2.70	$3.40	$4.30	$9.25
Nickel-plated... "	1.15	1.40	1.70	2.00	2.45	3.05	3.80	4.80	10.25

"CROWN" INDEX SIGHT-FEED GLASS BODY OIL CUP

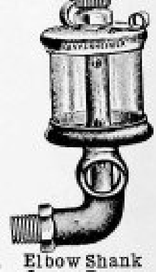
Number	0	1	1½	2	3	4	5	6	8
Extreme Outside Diameter of Cup (lever included)...inches	2 5/16	2 11/16	2 15/16	3¼	3¾	4	4 11/16	5¼	6¼
Extreme Height of Cup (over all)...inches	4⅛	5 1/16	5⅝	6	6 5/16	7 1/16	8¼	9 5/16	10⅜
Outside Diameter of Glass.. "	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Glass... "	1⅛	1⅜	1⅝	1⅞	2⅛	2⅜	3	4	5
Capacity...ounces	⅝	1	1½	2½	4	5	10	18	34
Shank Pipe Thread...inch	⅛	¼	¼	⅜	⅜	⅜	½	½	¾
Finished Brass...each	$1.25	$1.50	$1.75	$2.10	$2.55	$3.15	$3.90	$4.80	$10.00
Nickel-plated... "	1.40	1.70	2.00	2.35	2.85	3.50	4 30	5.30	12.00

Straight Shank, Lever Up, Cup Feeding

"SENTINEL" SNAP LEVER SIGHT-FEED GLASS BODY OIL CUPS

Number	0	1	1½	2	3	4	5	6	8
Extreme Outside Diameter of Cup...inches	1½	1¾	2	2¼	2½	2¾	3¼	3¾	4½
Extreme Height of Cup over all, Straight Shank, lever up...inches	5¼	5⅝	5 15/16	6¼	6 13/16	7⅝	8½	9	11
Outside Diameter of Glass, "	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Glass... "	1⅛	1⅜	1⅝	1⅞	2⅛	2⅝	3	4	5
Capacity...ounces	⅝	1	1½	2½	4	5	10	18	34
Shank Pipe Thread...inch	⅛	¼	¼	⅜	⅜	⅜	½	½	¾
Finished Brass...each	$3.00	$3.25	$3.50	$3.75	$4.25	$5.25	$7.25	$9.25	$20.00
Nickel-plated... "	3.50	3.75	4.00	4.25	4.75	5.75	8.00	10.25	22.00
Finished Brass Elbow Shank "	3.50	3.80	4.10	4.50	5.00	6.00	8.25	9.25	21.50
Nickel-plated, Elbow Shank "	4.00	4.30	4.60	5.00	5.50	6.50	9.00	10.25	23.50

For Glasses, see page 443.



Elbow Shank Lever Down, Feed Stopped

LUNKENHEIMER OIL CUPS

AUTOMATIC ROD OIL CUPS

For Engine Crankpins

Needle Valve Feed

Number	0	1	1½	2	3	4
Extreme Outside Diameter of Cup..inches	1½	1¾	2	2¼	2½	2¾
Extreme Height of Cup (plug raised, open to fill).....inches	3 11/16	4 3/16	4 11/16	5 1/8	5 13/16	6
Outside Diameter of Glass..... "	1¼	1½	1¾	2	2¼	2½
Height of Glass..... "	1 1/8	1 3/8	1 5/8	1 7/8	2 1/8	2 3/8
Capacity.....ounces	⅝	1	1½	2½	4	5
Shank Pipe Thread.....inch	⅛	¼	¼	⅜	⅜	⅜
Screw or Needle Valve Fed Finished Brass.....each	$1.10	$1.50	$2.00	$2.50	$3.00	$4.00
Screw or Needle Valve Fed Nickel-plated.....each	1.25	1.70	2.25	2.75	3.30	4.35

Screw Feed

SHAFT OILERS

Shaft Oiler

Number	1	2	3
Capacity.....ounces	1	1⅝	2¾
Diameter .....inches	1¾	2	2½
Height..... "	2⅝	3	3½
Finished Brass.....each	$0.50	$0.55	$0.60
Extra Glasses..... "	.08	.08	.08
Extra Cork Washers, per doz.	.15	.15	.15

Shaft Oiler with Loose Wire and Wood Plug

BRASS LOOSE PULLEY OILER

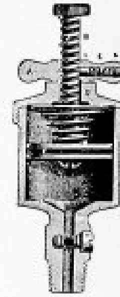
Number	0	1	2	3	4
Height of Cup (plug raised to fill).....inches	1 15/16	2 5/16	2 5/8	3	3 1/8
Length of Cup..... "	1¾	2	2 5/16	2½	2¾
Diameter of Body..... "	1	1 5/16	1½	1¾	2
Capacity.....ounces	¼	½	¾	1¼	1¾
Rough Brass, Bronzed.....each	$0.25	$0.30	$0.40	$0.50	$0.65

CYLINDRICAL AND URN-SHAPED GLASSES

Number	000	00	0	1	1½	2	3	4	5	6	8
Outside Diameter of Cylindrical Glasses.....inches	1	1 1/8	1¼	1½	1¾	2	2¼	2½	3	3½	4¼
Height of Cylindrical Glasses.....inches	⅞	1	1 1/8	1 3/8	1 5/8	1 7/8	2 1/8	2 3/8	3	4	5
Outside Diameter at upper end of Urn-shaped Glasses.....inches	.....	1 1/8	1¼	1½	1¾	2	2¼	2½	3	3½	....
Height of Urn-shaped Glasses.....inches	.....	1½	1 5/8	2	2¼	2½	2¾	3 1/8	3 5/8	4½	....
Cylindrical or Urn-shaped Glasses.....each	$.05	.06	.08	.10	.10	.12	.15	.25	.35	.65	1.50
Cork Washers.....per doz.	.15	.18	.24	.30	.36	.40	.45	.50	.60	.75	1.50

LUNKENHEIMER GREASE CUPS

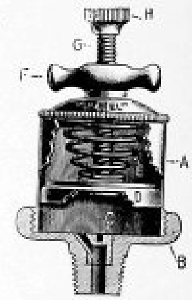
Ideal Exterior


Ideal Sectional

"IDEAL" AUTOMATIC GREASE CUP

Number		00	0	1	2	3	4	5
Inside Diameter	inches	⅞	1¼	1½	2	2½	3	3½
Extreme Outside Diameter	"	1¾	1¾	2	2⅝	3¼	3⅝	4¼
Extreme Height Over All (Plunger raised, Cup open)	"	3⅜	4⅜	5¼	6½	7½	8¾	9¾
Shank Pipe Thread	"	⅛	¼	¼	⅜	½	½	¾
Capacity (Grease)	ounces	½	1	1½	3	6	10	18
Finished Brass	each	$1.50	$2.00	$2.50	$3.20	$4.30	$6.00	$12.50
Nickel-plated	"	1.75	2.25	2.80	3.60	5.00	6.75	13.80

Jewel Exterior

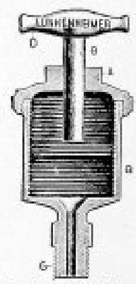


Jewel Sectional

"JEWEL" AUTOMATIC GREASE CUP

Number		00	0	1	2	3	4
Inside Diameter	inches	1	1¼	1½	2	2½	3
Extreme Outside Diameter	"	1⅜	1¾	2	2 17/32	3⅛	3⅝
Extreme Height Over All (Plunger raised, Cup open)	"	3⅝	3 13/16	4⅞	5⅝	6⅞	8 1/16
Shank Pipe Thread	"	⅛	¼	¼	⅜	½	½
Capacity (Grease)	ounces	½	1	1½	3	6	10
Finished Brass	each	$0.80	$1.00	$1.30	$1.70	$2.30	$3.20
Nickel-plated	"	1.00	1.30	1.70	2.20	2.90	3.90

Marine Exterior

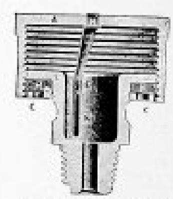


Marine Sectional

SCREW FEED "MARINE" GREASE CUP

Number		00	0	1	2	3	4	5
Inside Diameter	inches	⅞	1¼	1¾	2	2⅝	2¾	3¼
Extreme Outside Diameter	"	1 11/32	1¾	2	2⅝	3 1/32	3⅝	4¼
Extreme Height Over All (Plunger raised, Cup open)	"	3 5/16	4⅝	5 1/16	6 7/16	7 5/16	8 21/32	10¼
Shank Pipe Thread	"	⅛	¼	¼	⅜	½	½	¾
Capacity (Grease)	ounces	½	1	1½	3	6	10	18
Finished Brass	each	$1.00	$1.20	$1.60	$2.00	$2.80	$4.00	$7.00
Nickel-plated	"	1.20	1.45	1.90	2.40	3.40	4.75	8.20

Tiger Exterior


Tiger Sectional

"TIGER" PLAIN BRASS GREASE CUP

Number		00	0	1	2	3	4
Inside Diameter	inches	⅞	1 7/32	1⅝	1⅞	2⅜	2⅞
Extreme Outside Diam., Finished Pattern	"	1⅛	1½	1 11/16	2⅛	2⅝	3⅛
Extreme Height Over All (Cup open), Finished Pattern	"	1¾	2	2 5/16	2 7/16	2⅞	3¼
Extreme Outside Diam., Rough Pattern	"	1 3/16	1 3/16	1⅝	2¼	2¾	3¼
Extreme Height Over All, (Cup open), Rough Pattern	"	1 11/16	2 1/16	2⅜	2⅝	2⅞	3⅞
Shank Pipe Thread	"	⅛	¼	¼	⅜	½	½
Capacity (Grease)	ounces	½	⅔	1	2	3½	5
Finished Brass	each	$0.70	$0.90	$1.15	$1.50	$2.15	$2.90
Finished Brass, Nickel-plated	"	.82	1.06	1.36	1.80	2.60	3.40
Rough Brass	"	.56	.74	.96	1.28	1.76	2.30

Surety Cup

"SURETY" GREASE CUPS

With Wing Handle on Cap

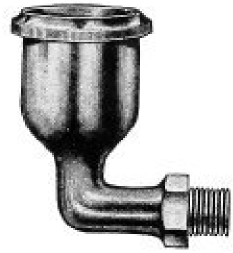
Number		00	0	1	2	3	4
Inside Diameter	inches	⅞	1 7/32	1⅜	1⅞	2⅜	2⅞
Extreme Outside Diameter	"	1⅛	1½	1 11/16	2⅛	2⅝	3⅛
Shank Pipe Thread	"	⅛	¼	¼	⅜	½	½
Capacity (Grease)	ounces	½	⅔	1	2	3½	5
Finished Brass	each	$0.85	$1.05	$1.35	$1.80	$2.40	$3.60
Finished Brass, Nickel-plated	"	.95	1.15	1.50	2.00	2.70	3.90
Rough Brass	"	.70	.90	1.15	1.50	2.00	3.00

Plain Steel Cup

PLAIN STEEL GREASE CUP

Size	number	00	0	1	2	3	4
Inside Diameter	inches	1	1¼	1⅝	2	2½	3
Shank Pipe Thread		⅛	¼	¼	⅜	½	½
Height Over All	"	1¾	2⅝	2 7/16	2⅝	2 13/16	3¼
Capacity (Grease)	ounces	½	⅔	1	2	3½	5
Rough Steel	each	$0.25	$0.35	$0.45	$0.55	$0.80	$1.05

THE MICHIGAN ALL BRASS OIL CUPS



WITH T HANDLE COCK

Number	11	12	13	14	15	16
Diameter ... inches	1	1¼	1½	2	2¼	2½
Threaded Iron Pipe ... size	¼	¼	⅜	½	½	½
Each	$1.00	$1.50	$2.00	$3.00	$3.75	$4.25

WITH LEVER HANDLE COCK

Number	11½	12½	13½	14½	15½	16½	17½
Diameter ... inches	¾	1	1¼	1½	2	2¼	2½
Threaded Iron Pipe ... size	⅛	¼	¼	⅜	½	½	½
Each	$0.90	$1.00	$1.60	$2.20	$3.25	$4.00	$5.00

PLAIN BRASS OILER

Number	00	0	1	2	3	4	5	6	7	8	9	10
Diameter ... inches	⅝	¾	⅞	1	1⅛	1¼	1½	1¾	2	2¼	2½	2¾
Threaded Iron Pipe ... size	⅛	⅛	⅛	¼	¼	¼	⅜	⅜	½	½	½	¾
Each	$0.25	$0.30	$0.35	$0.40	$0.50	$0.60	$0.90	$1.25	$1.75	$2.25	$2.75	$3.60
Add to list for Brass Tubes.	.10	.10	.10	.10	.10	.15	.15	.15	.15	.20	.20	.20

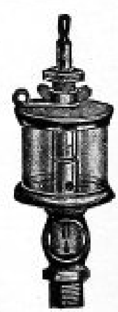
ELBOW SHANK OILER

Number	17	18	19	20	21	22	23
Diameter ... inches	⅞	1	1⅛	1¼	1½	1¾	2
Threaded Iron Pipe ... size	⅛	¼	[illegible]	¼	⅜	⅜	½
Each	$0.50	$0.70	$0.80	$1.00	$1.40	$1.80	$2.30

THE MICHIGAN PLAIN GLASS OIL CUP

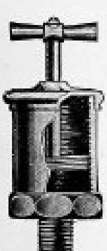
No.	Capacity ounces	Shank Pipe Thread	Diam. Glass	Height Glass	Brass Finish Each
90	½	⅛	1⅛	1	$1.30
91	¾	⅛	1¼	1⅛	1.35
92	1	¼	1⅝	1⅜	1.70
93	1½	¼	1¾	1½	2.15
94	2½	⅜	2	1¾	2.65
95	4	⅜	2⅜	2⅛	3.30
96	6	⅜	2¾	2½	4.00
97	10	½	3⅛	2⅞	5.35
98	Pint	½	3½	4	6.65

THE MICHIGAN "SNAP LEVER" SIGHT FEED OILER



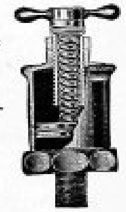
No.	Capacity ounces	Shank Pipe Thread	Diam. Glass	Brass Finish Each
121	¾	⅛	1¼	$2.50
122	1	¼	1⅝	2.70
123	1½	¼	1¾	2.90
124	2½	⅜	2	3.15
125	4	⅜	2⅜	3.50
126	6	⅜	2¾	5.20
127	10	½	3⅛	6.00
128	Pint	½	3½	7.50
129	Quart	¾	4⅛	13.00

THE MICHIGAN "IMPROVED COMMON SENSE" GREASE CUP



No.	Outside Diam. inches	Size of Shank inches	Capacity ounces	Brass Finish Each
XA	1¼	¼	¾	$1.25
XB	1⅝	¼	1½	1.50
XC	2	⅜	3	2.50
XD	2⅜	⅜	4½	3.50
XE	2¾	½	7	5.00
XG	3⅛	½	10	8.75

THE MICHIGAN "IMPROVED SPRING COMPRESSION" GREASE CUP



No.	Outside Diam. inches	Size of Shank inches	Capacity ounces	Brass Finish Each
XH	1⅝	¼	1½	$1.50
XJ	2	⅜	3	2.50
XK	2⅜	⅜	4½	3.25
XL	2¾	½	7	4.75
XM	3⅛	½	10	8.50

GREASE CUPS

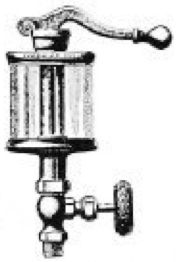
PEERLESS

Number	Inside Diameter inches	Pipe Thread inch	Capacity (grease) oz.	Finished Brass Each	Finished Nickeled Each	Rough Each
00	1	1/8	1/4	$0.70	$0.82	$0.56
0	1 1/4	1/4	2/3	.90	1.06	.74
1	1 1/2	1/4	1	1.15	1.36	.96
2	2	3/8	2	1.50	1.80	1.28
3	2 1/2	1/2	3 1/2	2.15	2.60	1.76
4	3	1/2	5	2.90	3.40	2.30

POWELL'S PATENT IMPROVED COMPRESSION GREASE CUPS

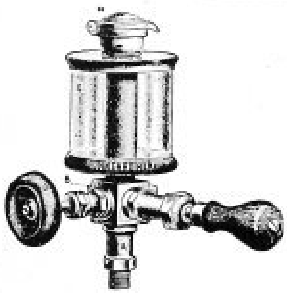
Number	Diameter of Body inches	Capacity oz.	Size Sh'nk Pipe Thread inches	Iron Painted Dozen	Finished Brass Dozen
00	1	1/2	1/4	$10.00	$21.00
0	1 1/4	1	1/4	11.25	25.00
1	1 1/2	1 1/2	3/8	12.00	29.00
2	2	3	1/2	12.50	33.50
3	2 1/2	4 1/2	1/2	25.00	50.00
.	...	...	..	.....	.....

LUNKENHEIMER ALPHA OIL PUMPS



Size....number	3	5	6	8
Outside Diameter of Glass....inches	2 1/4	3	3 1/2	4 1/4
Height of Glass.... "	2 1/8	3	4	5
Capacity....	1/8 Pint	1/2 Pint	1 Pint	1 Quart
Shank Pipe Thread....inch	3/8	3/8	1/2	1/2
Finished Brass....each	$7.50	$8.50	$10.00	$15.00
Nickel-plated.... "	8.25	9.50	11.00	16.50
Extra Glasses.... "	.15	.35	.65	1.50
Extra Cork Washers....per doz.	.45	.60	.75	1.50

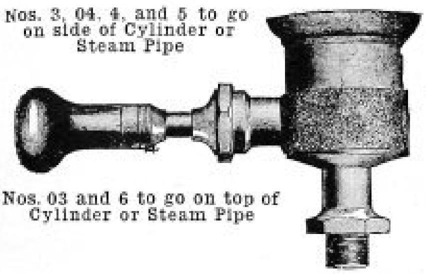
"UNIVERSAL" HAND OIL PUMP



Size....number	3A	5A	6A	8A
Outside Diameter of Glass....inches	2 1/4	3	3 1/2	4 1/4
Height of Glass.... "	2 1/8	3	4	5
Capacity....	1/8 Pint	1/2 Pint	1 Pint	1 Quart
Shank Pipe Thread....inch	3/8	3/8	1/2	1/2
Glass Body, Finished Brass....each	$7.50	$8.50	$10.00	$15.00
Glass Body, nickel-plated.... "	8.25	9.50	11.00	16.50
Brass Body, finished brass.... "	8.30	9.50	11.00	16.50
Brass Body, nickel-plated.... "	9.10	10.30	12.20	18.20
Extra Glasses.... "	.15	.35	.65	1.50
Extra Cork Washers....per doz.	.45	.60	.75	1.50

FELTHOUSEN PATENT HAND CYLINDER OIL PUMPS

Nos. 3, 04, 4, and 5 to go on side of Cylinder or Steam Pipe

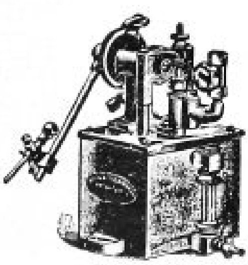


Nos. 03 and 6 to go on top of Cylinder or Steam Pipe

No.		Size inches	With Screw Top Each	With Strainer Top Each	Extra Strainer Top Each
1	Rough, with bowl for tallow.	2 x2	$3.50	$3.50	$0.30
2	Finished, " " " "	2 x2	5.00	5.00	.30
03	Finished....	2 x2	3.50	3.65	.40
6	"	2 3/4x2 3/4	5.00	5.25	.60
3	"	2 x2	3.50	3.65	.40
04	"	2 3/4x2 3/4	5.00	5.25	.60
4	"	3 1/2x3 1/2	7.50	7.80	.75
5	"	7 x4 1/2	12.00	12.00	.....
	Loco Pump, Gauge Glass and 2-outlet Cock....	7 x4 1/2	20.00	20.00	.....

McCANNA'S LUBRICATING PUMPS

Force Feed



Iron Reservoir
Nickel or Enamel Finish

Glass Reservoir
Nickel Finish

Capacity and Style	Single Feed Each	Double Feed Each	Triple Feed Each	Quadruple Feed Each	Extra Glasses Each
1 Pt., Glass	$16.00	......	......	......	$1.00
1 Qt., "	25.00	......	......	......	1.25
1 " Iron	30.00	......	......	......	.....
1/2 gal. "	35.00	$45.00	......	......	.....
1 " "	45.00	55.00	$65.00	$75.00	.....
1 1/2 " "	55.00	65.00	75.00	85.00	.....

LUNKENHEIMER PATENT DRIP AND SIGHT-FEED VALVES, WIPER CUPS, ETC.

OILING DEVICES FOR ENGINE AND MACHINERY BEARINGS

Cross Drip Valve

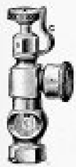
Straight Drip Valve

Angle Drip Valve

Corner Drip Valve

Cross Sight-Feed Valve

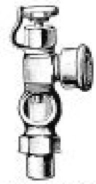
Straight Sight-Feed Valve


Angle Sight-Feed Valve

Corner Sight-Feed Valve

Cross Sight-Feed Valve, with Union

Straight Sight-Feed Valve, with Union


Angle Sight-Feed Valve, with Union

Corner Sight-Feed Valve, with Union

Adjustable Wick Wiper Cup

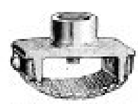
Adjustable Wick Wiper Cup with Elbow Shank

Adjustable Wiper Cup for Crank Pin

Adjustable Plain Wiper Cup with Elbow Shank

Plain Wiper Cup

Adjustable Plain Wiper Cup with Straight Shank


Horozontal Wick Wiper Tip

Oil Cup Wiper Tip

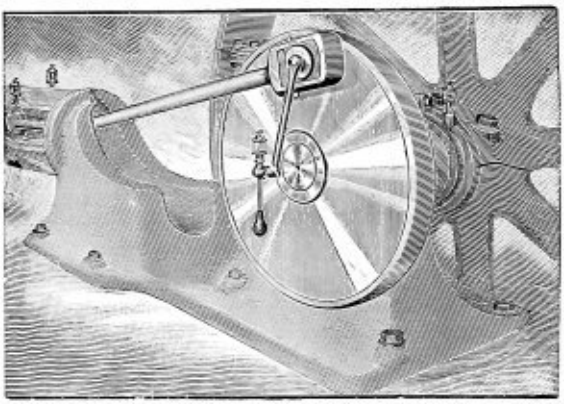
Drip Trough

		Brass Finished		Nickel Plated	
Size	inch	⅛, ¼, ⅜	½	⅛, ¼, ⅜	½
Cross Drip Valve	each	$1.50	$1.60	$1.75	$1.85
Straight Drip Valve	"	1.25	1.40	1.50	1.65
Angle Drip Valve	"	1.25	1.40	1.50	1.65
Corner Drip Valve	"	1.50	1.60	1.75	1.85
Cross Sight-feed Valve	"	2.30	3.20	2.60	3.50
Straight Sight-feed Valve	"	2.00	3.00	2.25	3.25
Angle Sight-feed Valve	"	2.00	3.00	2.25	3.25
Corner Sight-feed Valve	"	2.30	3.20	2.60	3.50
Cross Sight-feed Valve with Union	"	2.80	3.70	3.10	4.00
Straight Sight-feed Valve with Union	"	2.50	3.50	2.80	3.80
Angle Sight-feed Valve with Union	"	2.50	3.50	2.80	3.80
Corner Sight-feed Valve with Union	"	2.80	3.70	3.10	4.00
Adjustable Plain Wiper Cup, Straight Shank	"	2.50	3.00	3.00	3.50
Adjustable Plain Wiper Cup, Elbow Shank	"	3.00	3.50	3.50	4.00
Adjustable Wiper Cup for Wick, Straight Shank	"	2.50	3.00	3.00	3.50
Adjustable Wiper Cup for Wick, Elbow Shank	"	3.00	3.50	3.50	4.00
Adjustable Crankpin Wiper Cup	"	2.50	3.00	3.00	3.50
Horizontal Wick Wiper Tip	"	2.00	2.30	2.30	2.60
Wiper Tips	"	.40	.50	.50	.60

Plain Wiper Cup			
Pipe Th'd	O. Diam.	Brass	Nickel Pl.
¼	1¼	$1.00	$1.20
⅜	1½	1.50	1.75
½	2	2.00	2.40
..	...	....	....

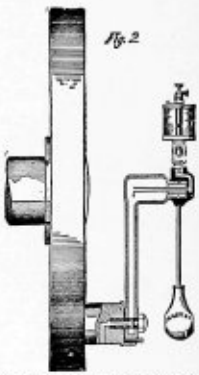
Drip Troughs				
Length in.	Pipe Th'd	Rough	Finished	Nickel Pl.
3	¼	$0.75	$1.00	$1.25
5	⅜	1.00	1.50	2.00
7	½	1.50	2.00	2.75
9	½	2.00	2.75	3.50

NUGENT'S PATENT OILING DEVICES



Anti-Stand Dust Proof Crank Pin Center Oiling Device, designed for lubricating the crank pin of an Engine or any other bearing surface where applicable, from a stationary sight feed oil cup without the aid of a supporting stand from the floor or other rigid object.

As applied, this device is made oil tight without the aid of stuffing-boxes or packing. Oil cup proper remains perfectly stationary when engine is running at full speed, and not a particle of dust or grit can enter with the oil.



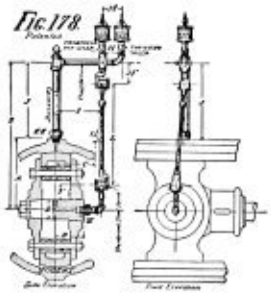
IN ORDERING

Send exact stroke of Engine, which is twice the distance between centers of the shaft and crank pin.

If purchaser furnishes the bolt, send diameter of bolt for each stroke Engine.

If crank pin is drilled and you want us to furnish the bolt, send full particulars and data about the hole—that is, the size and kind of tap, including number of threads to the inch, and if pin has a loose cap, send thickness of this cap at the center where the bolt goes through.

If purchaser furnishes the oil cup, always mention size of tap for same.



Stroke (Inclusive)	Polished without Oil Cup	Size and Kind of Bolts we Ship with Each when no other Size or Kind is Ordered Use no Smaller		Size of Oil Cup Recommended	
		Diameter	Threads to the inch	Capacity	Size of Shank
6 to 16	$10.00	3/4	10	3 oz.	3/8 pipe tap
17 " 30	12.00	3/4	10	5 "	3/8 " "
31 " 48	15.00	7/8	9	10 "	1/2 " "
49 " 72	18.00	1	8	Pint	1/2 " "

Fig. 178 illustrates Telescopic Crosshead Pin and Top Guide Oiling device.

List price without Oil Cups. Polished.

1 to 30 in. stroke, inclusive..... $21.00
31 " 48 " " " 24.00
49 " 72 " " " 27.00

If distance I is longer than 8½ in. add $2.00 to list price for supports which will be necessary.

IN ORDERING

Send stroke; pipe tap at E, H and KK and distances A, B, C, D.

Order by Fig. No. 178.

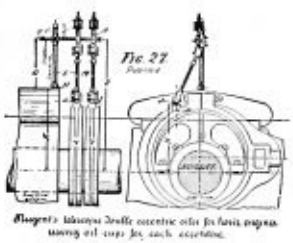


Fig. 27 illustrates Telescopic Double Ecc. Oiling Device.

List Price without Oil Cups. Polished.

For Single Eccentric, all throws..... $21.00
" Double " " " 36.00

IN ORDERING

Set Eccentrics on top center and give distances K, L, M, also N. O and the throw for each eccentric. Pipe tap at I and J. Order by Fig. No. 173 for single and No. 27 for double Eccentrics.

If L or L+M exceeds 15 inches add $2.50 to the list price for supports which will be necessary.

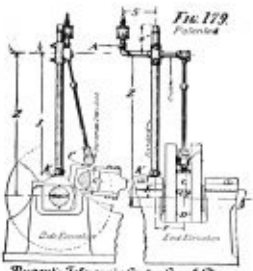


Fig. 179 illustrates Telescopic Center Crank Pin Oiling Device.

List Price without Oil Cup. Polished.

1 to 11 in. stroke, inclusive..... $22.00
12 " 18 " " " 24.00

IN ORDERING

Send stroke; pipe tap at A and C, and distances D, E, F and G.

Order by Fig. No. 179.

LUBRICATORS

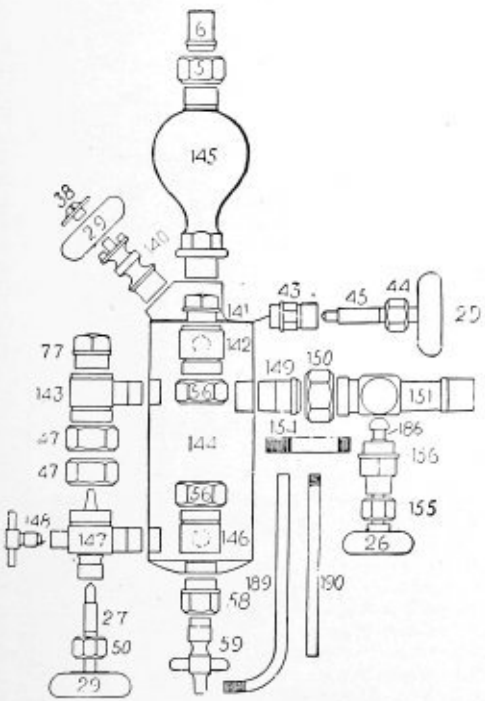
DETROIT DOUBLE CONNECTION IMPROVED STANDARD

Improved Standard Lubricator for Stationary Engines

This Lubricator is intended especially for the better classes of engines, and represents the very highest developments in its line. It is the most convenient, durable and reliable Sight-feed Lubricator made.

Size	⅓ Pint	½ Pint	1 Pint	1 Quart	½ Gal.	1 Gal.
For Cylinder...ins.	Under 10	10 to 12	12 to 18	18 to 30	30 & over	
Brass Finish	$17.00	$22.00	$30.00	$45.00	$60.00	$75.00
Nickel Finish	20.00	25.00	35.00	50.00	65.00	80.00
Pipe thread on support Arm..ins.	½	½	½	½	¾	¾
Size of Sight-feed Glass	⅝x2 1/16	¾x3	¾x3	¾x3	¾x3 ¼	¾x3 ¼
Size of Gauge Glass	⅝x2 1/16	⅝x3 ½	⅝x4 ⅝	⅝x4 ⅝	¾x6	¾x7 ¼

REPAIRS FOR ALL SIZES UP TO AND INCLUDING ONE QUART



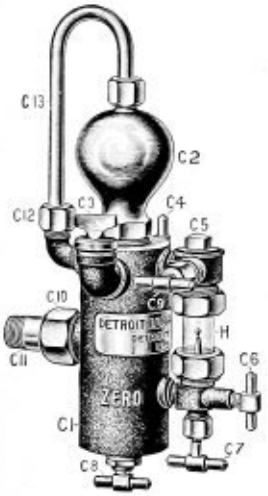
The numbers indicate the parts and should be used in ordering, stating also the Shop Number stamped on the Lubricator and size.

No.		
5	Nut for Tailpiece	$0.15
6	Tailpiece	.25
26	Wood Handle	.15
27	Sight-feed Valve Stem	.25
29	Wood Handle	.15
38	Button	.15
43	Center Piece	.25
44	Packing Nut	.15
45	Water Valve Stem	.25
47	Sight-feed Gland Nuts	.20
50	Packing Nut	.15
56	Gauge Gland Nuts	.20
58	Drain Valve Body	.35
59	Drain Valve Stem	.25
77	Plug	.25
140	Filler Plug Body	.40
141	Plug	.25
142	Upper Gauge Arm	.75
143	Upper Sight-feed Arm	.75
144	Body, ⅓ pint size	1.50
	" ½ " "	2.00
	" 1 " "	2.50
	" 1 quart "	4.00
145	Condenser, ⅓ pint size	1.00
	" ½ " "	1.25
	" 1 " "	1.50
	1 quart "	2.00
146	Lower Gauge Arm	.50
147	Lower Sight-feed Arm	1.00
148	Sight-feed Glass Drain Stem	.25
149	Plug for Support Arm	.25
150	Union Nut	.15
151	Support Arm	.75
154	Heater	.15
155	Packing Nut	.15
156	Globe Valve Body	.25
186	Globe Valve Stem	.25
189	Interior Oil Tube	.25
190	Interior Water Tube	.15
Sight-feed Valve complete, including Nos. 27, 50, 29, 38		.70
Water Feed Valve, Complete, including Nos. 43, 45, 44, 29, 38		.95
Drain Valve, complete, including Nos. 58, 59		.60
Globe Valve complete, without Support Arm, including Nos. 186, 156, 155, 26, 38		.95
Filler plug complete, including Nos. 140, 29, 38		.70

Steam pipe connections 75 cents extra. Glasses, 10 cents each. Gaskets, 25 cents per dozen.

LUBRICATORS

DETROIT ZERO SINGLE CONNECTION



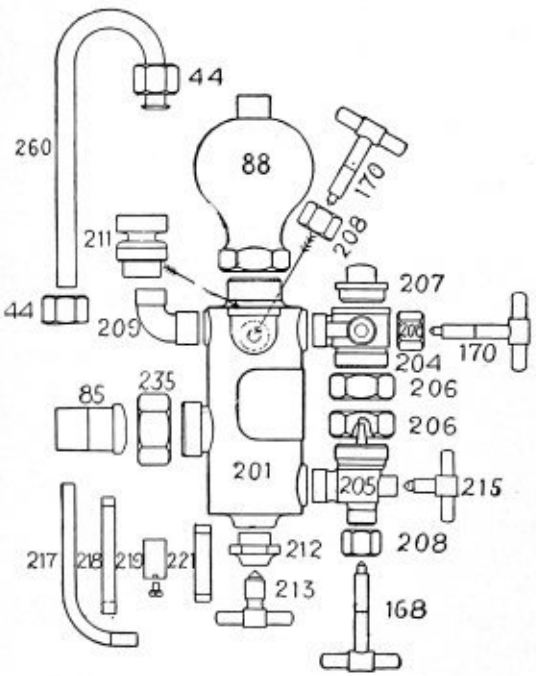
Zero Lubricator possesses every feature necessary or desirable for traction engine service, or for engines working in exposed places, subject to sudden changes of temperature. It is also used quite extensively on steam pumps.

The Heating Feature.— The oil in the Zero cup is kept warm by steam. This heating arrangement is automatic; it requires no attention — gives no trouble — but no matter how cold the weather, the oil will continue warm if steam is supplied to the engine. The oil cannot chill in this cup while the boiler is producing steam.

Size.....	¼ Pint	½ Pint	¾ Pint	Pint	Quart
Bronze Body, finished trimmings.....	$15.00	$17.00	$20.00	$28.00	$42.00
Nickel Plated, all over.....	18.00	20.00	23.00	32.00	47.00
Pipe Thread on Support Arm....inches	½	½	½	½	½

REPAIRS OF SINGLE CONNECTION ZERO LUBRICATOR

For All Sizes up to and Including One Pint



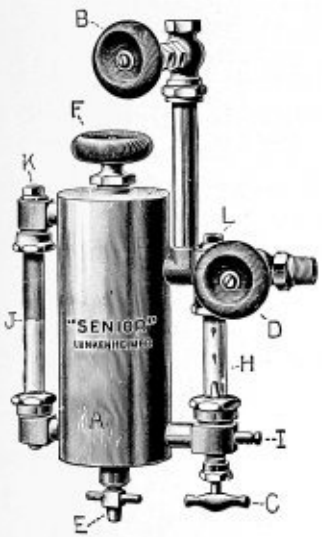
In Sections Showing Each Part Numbered for Convenience in Ordering

No.		
44.	Equalizing Tube Nut	$0.15
165.	Union Nut	.15
166.	Tailpiece	.25
168.	Sight-feed Glass Stem	.25
170.	Water Feed Valve Stem	.25
201.	Body, ¼ pint size	1.25
201.	" ⅓ " "	1.50
201.	" ½ " "	2.00
201.	" 1 " "	2.50
201.	" 1 quart "	4.00
202.	Condenser, ¼ pint size	.75
202.	" ⅓ " "	1.00
202.	" ½ " "	1.25
202.	" 1 " "	1.50
202.	" 1 quart "	2.00
203.	Union Nut	.15
204.	Packing Nut	.15
205.	Lower Right Feed Arm	1.00
206.	Sight-feed Gland Nuts, each	.20
207.	Plug	.25
208.	Packing Nut	.15
209.	Elbow	.15
210.	Filler Arm	.75
211.	Filler Plug	.35
212.	Drain Valve Body	.35
213.	Drain Stem	.25
214.	Vent Stem Body	.15
215.	Vent Stem	.15
216.	Equalizing Tube	.20
217.	Interior Oil Tube	.25
218.	Interior Water Tube	.15
219.	Check Valve	.15
221.	Heater	.15
222.	Plug	.15

LUBRICATORS

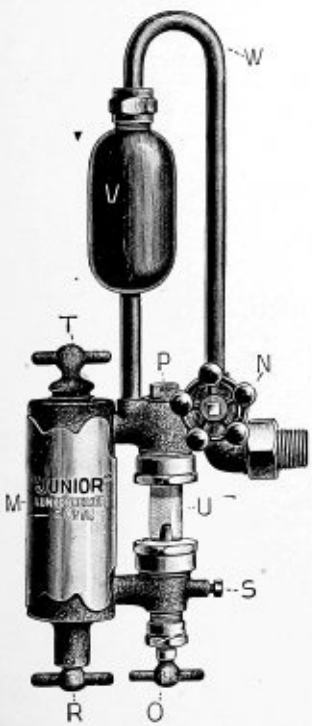
LUNKENHEIMER IMPROVED "SENIOR" SIGHT-FEED

DOUBLE CONNECTION



Size	¼ Pt.	⅓ Pt.	½ Pt.	⅔ Pt.	1 Pt.
Suitable for Engine Cylinders	Up to 4 inches	4 to 6 inches	6 to 10 inches	10 to 14 inches	14 to 18 inches
Shanks, Pipe Thread, inch	⅜	⅜	⅜	½	½
Finished Brass, each	$12.00	$15.00	$17.00	$20.00	$22.00
Nickel-plated, "	13.50	17.00	19.00	22.50	25.00
Condenser Connections, Brass Tubing and Angle Valve, each	.60	.70	.80	1.00	1.20
Condenser Connections, Brass Tubing and Angle Valve, Nickel Plated, each	.70	.80	.90	1.15	1.40
Length of Condenser Pipes necessary, inches	.15	.18	.24	.30	.36

Size	1½ Pt.	1 Qt.	½ Gal.	1 Gal.	....
Suitable for Engine Cylinders	18 to 24 inches	24 to 30 inches	From 30 up	....	....
Shanks, Pipe Thread, inch	½	½	½	½	....
Finished Brass, each	$25.00	$28.00	$38.00	$60.00	....
Nickel-plated, "	28.50	32.00	43.00	65.00	....
Condenser Connections, Brass Tubing and Angle Valve, each	1.40	1.50	1.60	1.70	....
Condenser Connections, Brass Tubing and Angle Valve, Nickel Plated, each	1.60	1.70	1.80	2.00	....
Length of Condenser Pipes necessary, inches	.42	.48	.60	.72	....



LUNKENHEIMER "JUNIOR" SINGLE CONNECTION SIGHT-FEED

The "Junior" can be attached to steam pipe or chest; if to steam pipe, it is preferable to connect same on boiler side of throttle; if placed on steam chest, attach it on top of same by using a short piece of vertical pipe and elbow. The working of the cup is not affected by turning steam on or off. In attaching, see that hole in steam pipe is tapped straight, allowing shank to stand exactly horizontal.

Use good cylinder oil and feed about four drops per minute. To clean glass tube, remove plug P, using cotton waste on a piece of wood (not iron wire). To prevent freezing, the cup can be drained by closing valve N and opening drain valve R. Keep stuffing-boxes tight, as leakage prevents perfect working of cup.

Size, pint	¼	⅓	½
Shank Pipe Thread, inch	⅜	⅜	½
Partly finished, each	$7.00	$8.00	$10.00
All Finished (Brass Condensers and Pipes, and Wood Handles), each	8.50	10.00	12.00
All Finished and Nickel Plated (Brass Condensers and Pipes, and Wood Handles), each	10.00	11.50	13.50

LUBRICATORS

THE MICHIGAN "IMPROVED CYCLONE" DOUBLE CONNECTION

	⅛ Pint	¼ Pint	1 Pint	1½ Pint	1 quart	½ Gal.	1 Gal.
Brass Finished,.....each	$13.30	$15.00	$20.00	$23.00	$26.75	$38.35	$60.00
Nickel Plated,..... "	14.30	16.00	21.35	24.70	28.35	40.35	63.35
Size, Sight Feed Glass,ins.	⅝x2¾	¾x2⅝	¾x2⅝	¾x2¾	¾x3	¾x3¼	¾x3¼
Size, Gauge Glass, ins....	⅝x2¾	⅝x2¾	⅝x3¾	⅝x4½	⅝x4¾	¾x7¼	¾x8¾
Pipe Thread on S'p't arm	½	½	½	½	½	¾	¾

When ordering repair parts always give shop number stamped on Lubricator.

THE MICHIGAN "HOT STUFF" SIGHT FEED LUBRICATOR

DOUBLE CONNECTION
For Extreme Cold Weather and Exposed Places

	⅛ Pint	¼ Pint	½ Pint	½ Pint	1 Pint	1 Quart
Brass Finish.....	$7.35	$8.70	$9.70	$11.70	$16.70	$24.00
Nickel Plated.....	8.35	9.70	10.70	13.00	18.35	26.00
Pipe Thread on Support Arm.....	⅜	½	½	½	½	½
Sight Feed Glass.....	⅝x1⅝	¾x1¾	¾x1¾	¾x1⅞	¾x2	¾x2½

When ordering repair parts always give shop number stamped on Lubricator.

THE MICHIGAN "METEOR" SIGHT FEED LUBRICATOR

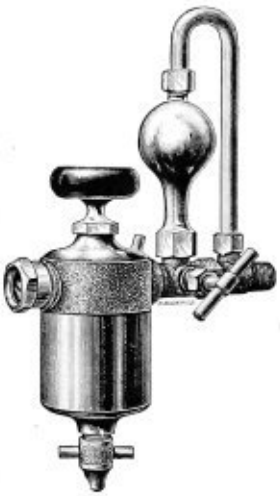
For Gas and Gasoline Engines and Air Compressor

	Diameter of Glass Shell Inches	Size of Shank Inches	Price Each Brass Finish	Price Each Nickel Plated	Extra Bulls Eye Glass per Pair including Washers
¼ Pint	2⅜	⅜	$5.00	$6.00	$0.10 Net
½ "	2¾	⅜	6.00	7.00	.10 "
½ "	3⅛	½	8.00	9.50	.10 "
1 "	3½	½	11.00	13.00	.10 "

LUBRICATORS—SWIFT'S

CLASS F. SINGLE CONNECTION SIGHT-FEED

Capacity	Brass Finish Each
¼ pint	$3.50
½ "	3.75
½ "	4.00
1 "	6.00
1 quart	7.50

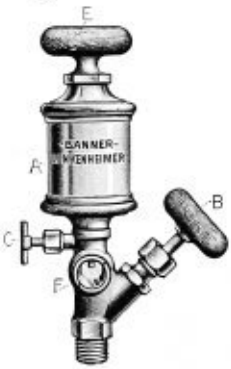


CLASS F. DOUBLE CONNECTION SIGHT-FEED

Capacity	Brass Finish each	For Engine Cylinder	Repairs, Each	
			Glasses and Washers	Sight Feed Nuts
¼ pint	$2.75	up to 5 in.	No. 2, $0.10	$0.15
½ "	3.00	5 " 8 "		
½ "	3.25	8 " 12 "		
1 "	4.65	12 " 20 "	No. 3, .10	.20
1 quart	6.15	20 " 30 "		

SWIFT'S CLASS G. SINGLE CONNECTION

Capacity, Pint	Brass, each
⅛	$2.15
¼	2.50
½	2.90



"BANNER" SIGHT-FEED LUBRICATOR
For Air Compressors, Blowers, etc.

Size.....number	0	1	2	3	4	5	6
Diameter of Oil Chamber..inches	1½	1¾	2	2¼	2½	3	3½
Capacity.....ounces	1½	2½	3½	4½	6	10	18
Shank Pipe Thread.....inch	⅜	⅜	½	½	½	½	¾
Brass.....each	$3.50	4.00	5.00	6.00	8.00	10.00	12.00
All Finished and Nickel pl't'd "	$4.20	5.00	6.00	7.25	9.50	12.00	14.00
Extra Sight-feed Glasses per doz.	$1.20	1.20	1.20	1.20	1.20	1.20	1.20

IMPROVED "PARAGON" GLASS BODY SIGHT-FEED LUBRICATOR
For Gas, Gasoline or Oil Engines

Size.....number	1½	2	3	4	5	6	8
Outside Diameter of Glass.....inches	1¾	2	2¼	2½	3	3½	4¼
Height of Glass..... "	1⅜	1⅞	2⅛	2¾	3	4	5
Capacity (Oil)..... ounces	1½	2½	4	5	10	18	32
Shank Pipe Thread.....inches	¼	⅜	⅜	⅜	½	½	¾
Finished Brass..... each	$2.00	2.80	3.50	4.00	5.40	7.00	14.00
Nickel plated..... "	$2.40	3.25	4.10	4.60	6.25	8.20	16.40

PLAIN ENGINE LUBRICATOR

No.	Diameter inches	Pipe Thread inch	Plain each	Plain, with Cock and Tube each
00	1	⅜	$2.00	$3.00
0	1¼	⅜	2.20	3.20
1	1½	⅜	2.40	3.40
2	1¾	½	2.60	3.60
3	2	½	2.90	3.90
4	2¼	½	3.25	4.25
5	2½	½	3.75	4.75
6	3	¾	4.75	5.75
7	3½	¾	7.00	8.00
8	4	¾	10.00	11.00

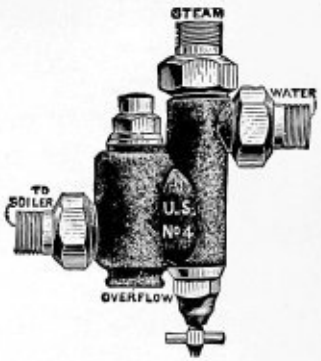
INJECTORS

THE PENBERTHY

Size	Each	Pipe Connections, Inches			Gals. per Hr. 1 to 6 ft. Lift, 45 to 75 lbs. Pressure		Horse Power
		Steam	Suction	Delivery	Maximum	Minimum	
OO	$16.00	3/8	3/8	3/8	80	55	4 to 8
A	18.00	1/2	1/2	1/2	120	70	8 " 15
AA	20.00	1/2	1/2	1/2	165	90	15 " 20
B	25.00	3/4	3/4	3/4	250	135	20 " 30
BB	30.00	3/4	3/4	3/4	340	165	30 " 40
C	40.00	1	1	1	475	300	40 " 60
CC	45.00	1	1	1	575	350	60 " 72
D	55.00	1 1/4	1 1/4	1 1/4	750	400	72 " 93
DD	60.00	1 1/4	1 1/4	1 1/4	920	500	93 " 120
E	75.00	1 1/2	1 1/2	1 1/2	1 300	700	120 " 160
EE	90.00	1 1/2	1 1/2	1 1/2	1 740	900	160 " 220
F	110.00	2	2	2	2 270	1 100	220 " 290
FF	125.00	2	2	2	2 820	1 400	290 " 350

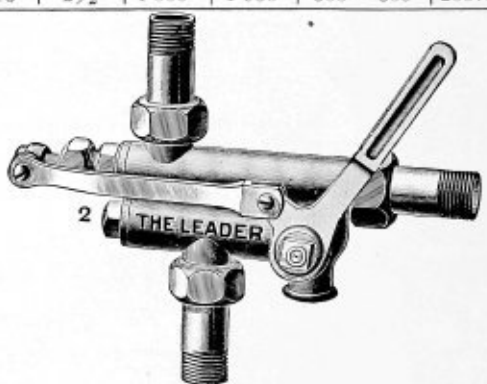
THE METROPOLITAN AUTOMATIC

Size	Each	Size of Pipe Connection	Capacity Gals. per hr.	Horse Power
2	$15.50	3/8	60	4 to 6
3	16.00	3/8	80	6 " 8
3 1/2	18.00	1/2	120	8 " 15
4	20.00	1/2	165	15 " 20
5	25.00	3/4	250	20 " 30
6	30.00	3/4	350	30 " 45
7	40.00	1	500	45 " 65
8	45.00	1	600	65 " 80
9	55.00	1 1/4	800	80 " 100
10	60.00	1 1/4	1 000	100 " 130
11	75.00	1 1/2	1 300	130 " 170
12	90.00	1 1/2	1 750	170 " 230
13	110.00	2	2 300	230 " 300
14	125.00	2	2 850	300 " 375



U. S. AUTOMATIC

Size	All Pipe Connections	Capacity Gals. per Hour		Horse Power	Each
		Maximum	Minimum		
00	1/4	36	15	1 to 4	$13.00
0	3/8	65	28	3 " 8	14.00
1	3/8	90	40	6 " 10	16.00
2	1/2	125	60	8 " 15	18.00
3	1/2	170	75	15 " 20	20.00
4	3/4	250	125	20 " 30	25.00
5	3/4	340	140	30 " 40	30.00
6	1	475	250	40 " 60	40.00
7	1	575	300	60 " 70	45.00
8	1 1/4	750	350	70 " 95	55.00
9	1 1/4	920	450	85 " 120	60.00
10	1 1/2	1 350	675	120 " 165	75.00
11	1 1/2	1 750	850	165 " 230	90.00
12	2	2 275	1 000	230 " 295	110.00
13	2	2 820	1 300	295 " 375	125.00
14	2	3 400	1 700	375 " 460	150.00
15	2 1/2	3 650	1 800	460 " 500	175.00
16	2 1/2	4 000	1 950	500 " 600	200.00



"LEADER"

Size	Size of Pipes		Horse Power of Boiler Will Feed	Gals. per Hour, 60 lbs. Steam	Each
	Steam Pipe	Suction & Feed			
1	3/8	3/8	3 to 7	60	$16.00
2	3/8	3/8	7 " 10	90	18.00
3	1/2	1/2	12 " 18	150	22.00
4	1/2	1/2	18 " 25	220	25.00
5	3/4	3/4	25 " 35	300	30.00
6	3/4	3/4	35 " 45	400	35.00
7	3/4	1	45 " 60	500	40.00
8	1	1	60 " 70	600	45.00
9	1	1 1/4	70 " 90	750	55.00
10	1	1 1/4	100 " 125	1000	65.00
11	1 1/4	1 1/2	125 " 150	1300	75.00
12	1 1/4	1 1/2	150 " 200	1800	90.00

EJECTORS AND JET PUMPS

H-D EJECTORS OR JET PUMPS
Made with Independent Couplings and Tubes

These Ejectors are used for lifting and conveying water and other liquids from one level to another.

The H-D Ejector will lift 24 feet. When it is desired to raise the liquid to a greater distance, place the Ejector near the liquid and elevate it. With a steam pressure of 65 lbs. it will elevate to 50 to 60 feet, and with 100 lbs. steam up to 70 to 80 feet.

Sizes	Price Each	Pipe Connections		Capacity per Hour gals.	Strainers Each
		Steam	Suction and Delivery		
No. 1 Brass	$8.00	3/8	1/2	250	$0.50
" 2 "	10.00	1/2	3/4	500	.75
" 3 "	15.00	3/4	1	960	1.00
" 4 "	20.00	1	1 1/4	1,300	1.25
" 5 "	25.00	1 1/4	1 1/2	2,000	1.50
" 6 Iron	35.00	1 1/4	2	4,000	1.75
" 7 "	45.00	1 1/2	2 1/2	8,000	....
" 8 "	55.00	2	3	11,000	....
" 9 "	70.00	2 1/2	4	15,000	....

BLAKESLEE'S STEAM JET PUMPS

Designed for supplying water tanks at mills, factories, and for pumping water or other liquids a tmines, stone quarries, tanneries, oil works, etc.

Size of Pump inches	Suction Pipe inches	Disch'ge Pipe inches	Steam Pipe inches	Steam Opening	Capacity per min. gallons	Each
3/4	3/4	1/2	3/8	3/16	8	$8.00
1	1	3/4	1/2	1/4	15	10.00
1 1/4	1 1/4	1	1/2	5/16	20	12.00
1 1/2	1 1/2	1 1/4	3/4	6/16	30	14.00
2	2	1 1/2	3/4	7/16	40	16.00
2 1/2	2 1/2	2	1	8/16	50	20.00
3	3	2 1/2	1	9/16	60	24.00

AMERICAN EJECTORS AND JET PUMPS

No.	Price		Pipe Size		Capacity per Hour 60 to 100 lbs. Steam		
	Ejector	Jet Pump	Steam	Suction and Del.	3 Feet Lift gallons	25 Feet Elevation gallons	50 Feet Elevation gallons
000	$6.00	$4.00	1/4	3/8	150	115	75
00	8.00	5.00	1/4	1/2	250	185	125
0	9.00	6.00	3/8	3/4	375	280	185
1	10.00	7.50	1/2	1	500	375	250
2	15.00	10.00	3/4	1 1/4	1,000	750	500
3	20.00	12.50	1	1 1/2	1,500	1,150	750
4	25.00	15.00	1 1/4	2	2,000	1,500	1,000
5	35.00	17.50	1 1/2	2 1/2	3,800	2,850	1,400
*6	40.00	25.00	2	3	4,500	3,375	2,250
7	50.00	35.00	2	4	6,500	4,870	3,750
8	65.00	55.00	2 1/2	5	10,000	7,500	5,000
9	90.00	.....	2 1/2	6	15,000	11,500	7,500

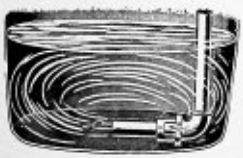
*Sizes up to and including number 5 are all brass. Number 6 and all larger sizes are iron bodies. The jets of ejectors of all sizes are brass and of a special good wearing composition.

BILGE PUMPS

Size of Pump inches	Suction Pipe inches	Discharge Pipe inches	Steam Pipe inches	Capacity per Hour with fifty lbs. Steam gallons	Each
1 1/2	1 1/2	1 1/4	3/4	2,400	$10.00
2	2	1 1/2	1	3,000	14.00
3	3	2 1/2	1	3,600	16.00
4	4	3	1 1/4	4,500	20.00
6	6	4	1 1/2	8,000	30.00

DIRECTIONS

Connecting steam-pipe to boiler, with globe valve in a convenient place, run it to suitable place for pump; screw pump to steam-pipe by a common thimble; afterward attach suction and discharge pipe, and the pump is ready for use.



NOISELESS WATER HEATERS

Size, 1, for 3/8 in. pipe ..... each $1.75
" 2, " 1/2 " " ..... " 2.00
" 3, " 3/4 " " ..... " 2.50
" 4, " 1 " " ..... " 3.00

OILER SETS

With Round and Oval Trays. Copperized, also Nickel Plated

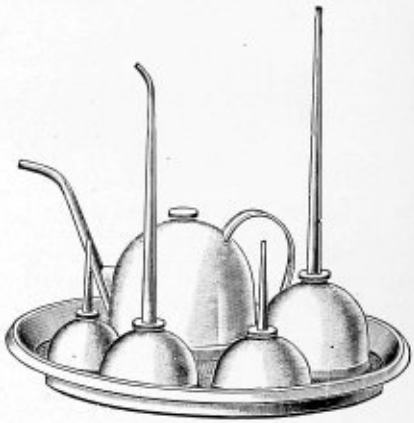
ENGINEERS' SETS

WITH ROUND TRAY

No.		Per Set
30.	5 pieces, copperized steel (counting Tray)	$5.00
40.	6 " " " " "	7.00
50.	5 " nickel plated " "	7.00
60.	6 " " " " "	10.00

WITH OVAL TRAY

No.		Per Set
35.	5 pieces, copperized steel (counting Tray)	$7.00
45.	6 " " " " "	10.00
55.	5 " nickel plated " "	8.00
65.	6 " " " " "	11.00



NICKEL-PLATED ON BRASS

No.		Per Set
30N.	5 pieces, including Tray	$8.00
40N.	6 " " "	11.00

BRASS

No.		Per Set
30B.	5 pieces, including Tray	$6.00
40B.	6 " " "	9.00

STEAMBOAT SETS

WITH ROUND TRAY

No.		Per Set
70.	5 pieces, copperized steel (counting Tray)	$6.00
80.	6 " " " " "	9.00
90.	5 " nickel plated " "	8.00
100.	6 " " " " "	11.00

WITH OVAL TRAY

No.		Per Set
75.	5 pieces, copperized steel (counting Tray)	$9.00
85.	6 " " " " "	12.00
95.	5 " nickel plated " "	10.00
105.	6 " " " " "	13.00

These Steamboat Sets are so constructed, with a double bottom to the tray, that in case there should be any motion of the boat the Oilers will remain in their places.

COPPER PLATED STEEL NOZZLES

STEEL NOZZLES

	Per Dozen
2½ inch Copper Plated Steel	$2.25
3 " " " "	2.75
5 " " " "	3.25
9 " " " "	4.25
12 " " " "	5.75
18 " " " "	7.00
14 " " " " Large opening for No. 111.	9.00

All Nozzles are interchangeable, except the 14 inch.

BRASS NOZZLES

	Per Dozen
2½ inch Brazed Nozzles	$3.00
3 " " "	3.50
5 " " "	4.25
9 " " "	5.00
12 " " "	6.25
18 " " "	7.50

OILERS, FILLERS AND POTS

COPPERIZED STEEL, ANTI-RUST

With Improved Clock Steel Plain Spring Bottoms

Straight Spout

STRAIGHT SPOUT

No.	Capacity pints.	Length of Nozzle inches	Diameter Dome inches	Per dozen
12	1/4	2 1/2	2 3/4	$4.50
13	1/3	3	3 3/8	5.50
13A	1/3	5	3 3/8	6.00
14A	1/2	3	3 3/4	7.50
14AA	1/2	5	3 3/4	8.00
15	1	3	4 1/8	9.25
15A	1	5	4 1/8	9.75

BENT SPOUT

14	1/2	9	3 3/8	$6.50
14B	1/2	9	3 3/4	8.50
16	1	9	4 1/8	10.50

Bent Spout

R. R. Pattern

R. R. PATTERN

No.	Capacity	Diameter inches	Height inches	Length of Nozzle inches	Per dozen
10	1 pint	3 3/8	5	12	$14.00
11	1 quart	4 1/8	6	18	18.00
101	1 "	4 1/8	6	10	18.00
111	2 "	5	8	10 or 14	20.00

TALLOW POTS

No.	Capacity	Diameter inches	Height inches	Per dozen
212	1 quart	5	5	$21.00
213	2 "	6	6	25.00

OIL FILLERS

Capacity	Diam. inches	Height inches	Copperized Steel		Polished Brass	
			No.	Per doz.	No.	Per doz.
1 pt.	4 1/8	3 1/2	19	$14.00	...	.....
1 1/2 pt.	4 3/4	4	19A	17.00	190	$22.00
1 qt.	5	5	210	20.00	200	30.00
2 "	6	6	211	24.00	201	34.00

Regular Tin Fillers, 1 quart ..... per doz., $4.25
Heavy " " 1 " ..... " 5.75

Copperized Steel and Brass Fillers

Tin Fillers

PERFECTION FILLER OILERS

	Tin
1 Quart	per doz., $6.00
2 "	" 9.60

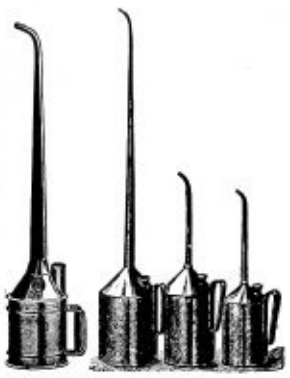
OILERS

CHACE'S PATENT ZINC OILERS

No.	Capacity	Tin Bottoms per doz.	Brass Bottoms per doz.
0	2 oz.	$1.25	$1.50
1	4 "	1.50	1.75
2	6 "	2.00	2.50
3	½ pt.	2.25	3.00
4	10 oz.	2.75	3.50
5	13 "	3.50	4.50
6	1 pt.	4.50	5.50

PARAGON OILERS

No.	Capacity	Zinc with Brass Bottom per doz.	Brass per doz.
1	4 oz.	$2.50	$3.50
2	6 "	3.50	4.50
3	½ pt.	4.00	5.25
4	10 oz.	4.50	6.00
5	13 "	5.50	7.00
6	1 pt.	6.50	8.50



ENGINEERS' TIN DRIP OILERS

1	pint	6½	inch	spout	per doz.	$3.75
1½	"	7	"	"	"	4.25
1	quart	7	"	"	"	4.50
1	"	12	"	"	"	5.00
1	"	18	"	"	Galv., Iron bottom	"	5.50
1	"	18	"	"	XXXX tin, extra heavy	"	15.00
2	"	18	"	"	Galv. iron, extra heavy	"	17.00

GOODWIN HAND OILERS

Spring is so adjusted that it cannot be broken — you put the oil with this oiler where you want to. No waste of oil.

No.		Capacity	Height Over All	per doz.
3	Tin Locomotive Oiler...	1 quart	28	$25.00
5	" " " ...	1 "	21	22.50
11	" Valve Oiler.....	2 quarts	15	30.00

WALL'S EVERLASTING BRAZED STEEL OIL CANS

No.		per doz.	No.		per doz.
100	⅙ pt. 2½ in. Nozzle	$4.00	304	½ pt. 4 in. Nozzle	$6.00
104	⅙ " 4 " "	4.50	306	½ " 6 " "	6.50
204	⅓ " 4 " "	5.00	309	½ " 9 " "	7.00
206	⅓ " 6 " "	5.50	404	¾ " 4 " "	7.00
209	⅓ " 9 " "	6.00	406	¾ " 6 " "	7.50
			409	¾ " 9 " "	8.00

THE "CANNON OILER."

CANNON OILERS
With Force Pump Attachment

Capacity	Length Spout inches	Brass per dozen	Tin per dozen
½ pint	6	$14.00	$9.00
1 "	8	16.00	10.00
1½ "	12	18.00	11.00
1 quart	20	21.00	13.00

LAMPS AND TORCHES

LAMPS

Copperized Steel, Anti-Rust

No.	Capacity Pints	Diameter Inches	Per Dozen
20	⅛	3⅜	$6.00
20½	½	3¾	9.00
21	1	4⅛	12.00
22	1	3¼	9.00
23	1½	4	12.00

No. 26

TORCHES

Copper Plated Steel Inspectors' and Locomotive

No. 26, 1 Pint, 2 inches diameter, 15 inches high, brass cap and tube.....per doz., $12.00
No. 27, 1½ pint, 4⅛ inches diameter, 4½ inches high, brass cap and tube....per doz., 12.00
No. 28, 1 quart, 4 oz., 5¼ inches diameter, 4½ inches high, brass cap and tube..per doz., 15.00

Nos. 27 and 28

EVERLASTING BRAZED STEEL PYRAMID TORCHES

No. 80.	½	pint,	1	burner	Pyramid	Steel	Torch	per doz.,	$7.00
" 81.	1	"	1	"	"	"	"	"	9.00
" 82.	1	quart,	1	"	"	"	"	"	10.00
" 83.	1	"	2	"	"	"	"	"	11.00
" 84.	2	"	1	"	"	"	"	"	12.00
" 85.	2	"	2	"	"	"	"	"	13.00
" 86.	4	"	2	"	"	"	"	"	15.00
" 87.	4	"	3 or 4	burner	Pyramid	Steel	Torch	"	18.00

HAND TORCHES

No. 1

No. 2

Nos. 3 and 4

			Per doz.
No. 1.	Capacity	½ pint, tin	$3.00
" 2.	"	1 " "	4.00
" 3.	"	1 " galv	4.00
" 4.	"	1 quart, "	9.00

OIL TANKS

Cape'y Gallons	Diam. in.	Height in.	Weight lbs.	Each
30	22	27	35	$4.60
60	25	31	50	5.20
110	30	37	65	8.50
165	37	37	85	12.50

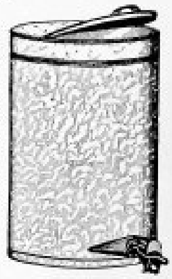
These are made of No. 26 galvanized iron up to 165 gallons; above of heavier material, with a 4-inch screw filler cap and a ¾-inch ground key brass faucet.

Capacity Gallons	Each
30	$5.00
60	6.00
110	7.50
165	11.50
215	14.70

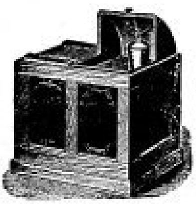
THE WEISE

These tanks are made of No. 26 galvanized iron with a hinged cover and 1¼-inch perfection gate.

Are used for lubricating oils and varnish.



Cape'y Gallons	Diam. in.	Height in.	Weight lbs.	Each
30	22	24	30	$5.50
60	22	36	40	6.00
110	30	36	60	9.50



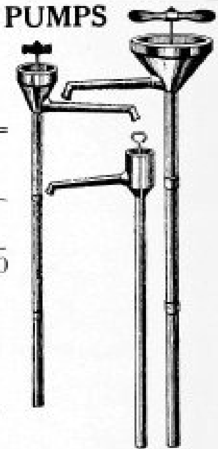
Removable Hood

Galvanized Iron, with Wooden Cabinet, on Casters

Capacity Gallons	Length inches	Width inches	Height Frame inches	Total height inches	Each
60	31	24	31	43	$22.00
110	42	29	33	46	28.00

Double, 55 gallons each end, with two pumps.................$38.00
Length, 42 inches; width, 29 inches; height of frame, 33 inches; total height, 46 inches.

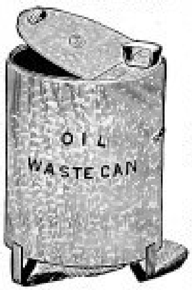
PUMPS



The pumps are made of heavy X tin; the Nos. 10 and 15 are reinforced at joints; all have brass valves, and we believe are the best on the market.

No. 5. 1¼ x32 in. each $1.20
" 10. 1½ x54 " " 3.00
" 15. 1½ x78 " " 3.50

OILY WASTE CANS



No. 1 Can size 11½x13½, 6 gal.... each $1.00
No. 2 " 12½x17 9 " .... " 1.50
No. 3 " 14¼x20 14 " .... " 2.00
No. 4 " 19 x24 29 " .... " 3.00

HEAVY MEASURES, SINGLE LIP

Galvanized Iron

1 gallon..each, $1.25 | 3 gallons..each, $3.25
2 " .. " 2.00 | 5 " .. " 3.25

Tin

¼ pint..per doz., $1·50 | 1 quart.per doz. $2.25
½ " .. " 1·50 | 2 " " 3.50
1 " .. " 1.85 | 1 gallon " 5.00

OIL CANS

WOOD JACKET CANS

	Each
1 gal. tin jacket can	$ 0.40
2 " " " "	.55
3 " " " "	.70
5 " " " "	.85
10 " " " "	1.50

FLUTED TIN FUNNELS

½ pt. per doz. $0.65
1 " " " .80
1 qt. " " 1.00

FAUCET CANS

	Each
5 gal. tin, ⅜ brass faucet	$1.75
10 " " ⅜ " "	2.25
5 " galvanized iron, ⅜ brass faucet..	2.25
10 " galvanized iron, ⅜ brass faucet..	2.75

KEROSENE CANS

1 gal. tin.............per doz., $3.00
2 " " .... " 4.00
1 " galvanized iron " 5.50
2 " " " " 7.00

PAILS

Standard Galvanized

Extra Heavy Banded Galvanized

Extra Heavy Galvanized

Galvanized, Round Bottom

Galvanized, with Bail

Horse Pail

Wood Fibre Pail

Wood Fibre, Fire Only

Wood Fibre, Round Bottom

F. L. Thorpe Galvanized Fire Pail

Well Bucket

Canvas Bucket

Rubber Pail

Rubber Fire Bucket

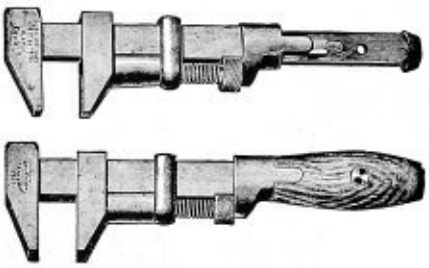
LIST PER DOZEN

Capacity Quarts	Standard Galvanized	Extra Heavy Banded Galv.	Extra Heavy Galvanized	Round Bottom Galvanized	With Bail Galvanized	Horse Pail, Wood		Wood Fibre
						Soft Wood	Oak	
10	$3.00	.....	.....	.....	$6.00	.....	.....	.....
12	3.25	$6.25	6.00	$4.50	6.50	.....	.....	$4.25
14	3.50	6.75	6.50	5.25	7.00	$3.75	$8.00	.....
16								

Capacity Quarts	Wood Fibre Round Bottom	Oak Well Buckets 4 Hoop	Canvas Rope Handle	Rubber Pail	Rubber Fire Bucket	F. L. Thorpe, Galvanized Fire Pail
10	.....	.....	$12.00	$28.50	$28.50	.....
12	$5.75	$5.00	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	$6.75

For Duplex Folding Pails and Baskets, see page 310.

WRENCHES



COE'S PATENT SCREW WRENCH

Size, inches....	6	8	10	12	15	18	21
Black, per doz.,	$9.00	10.00	12.00	14.00	24.00	30.00	36.00

NEW KEY MODEL FOR VERY HEAVY WORK

Length Inches	Will Open Inches	Weight Each Pounds	Each
28	5 1/4	17	$9.75
36	6 1/4	27	19.00

The 28 inch New Key Model will take 3 inch Standard Pipe Union, and the 36 inch a 4 inch.

STANDARD SCREW MONKEY WRENCH

Drop Forged Steel Bar

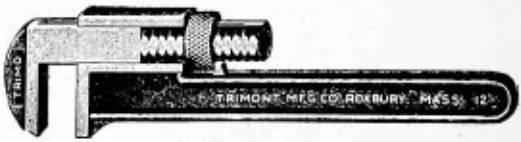
This wrench has extra Heavy Forged Steel Bar and Head — forged from one piece — milled screw thread — steel, knurl — opens full.

Inches.....	6	8	10	12	14
Per doz.,.....	$10.00	12.00	14.00	17.00	24.00

"ALWAYS READY" WRENCHES

Drop Forged Steel. Jaws Case-Hardened and Polished

No.....	1	2	2 1/2	3
Inches long.....	5	7	9 1/2	11 1/2
Black, per doz.....	$4.50	6.25	.....	.....
Nickeled.....	$5.00	6.75	10.50	16.00

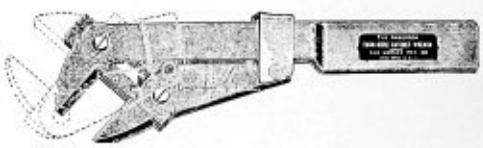


TRIMO, MONKEY WRENCH

Hardened Drop Forged Steel Case

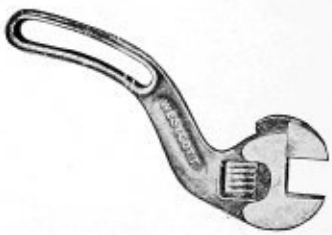
The leverage of this Wrench is increased in proportion to the size of the nut it is used upon, as the jaw is extending forward to adjust.

Size, in..	6	8	10	12	15	18	21
Per doz..	$9.00	10.00	12.00	14.00	24.00	30.00	36.00



ANDERSON TURN MORE RATCHET WRENCH

Inches long.....	6	8	10
Per doz.,.....	$22.00	$24.00	$27.00



ADJUSTABLE "S" NUT WRENCH

	Nut Wrenches	Pipe Wrenches
6 in. opens to 3/4 inch, per doz.	$7.20	$12.00
8 " " " 1 " "	9.00	15.00
10 " " " 1 3/8 " "	12.00	18.00
12 " " " 1 5/8 " "	15.00	24.00
14 " " " 2 " "	21.00	30.00

THE ALLIGATOR WRENCH

No.	Inches Long	Holds Pipe	Holds Round Iron	Per Doz.
1	5 3/4	1/8 to 3/8	1/4 to 3/4	$4.00
2	9	3/8 " 3/4	1/2 " 1	12.00
3	16	1/2 " 1 1/4	3/4 " 1 3/8	24.00
4	22	1 1/4 " 2	1 1/2 " 2 1/2	36.00
4 1/2	24	1 1/4 " 2 1/2	1 5/8 " 3	50.00
5	27	2 " 3	2 1/4 " 3 1/2	60.00

WRENCHES

LITTLE GIANT RATCHET NUT WRENCH

Sockets for Ratchet Nut Wrenches

Number	Size of Squares	Length	Each		
			Handle	Socket	Complete
1	Squares 7/16 and 1/2	8	$0.50	$0.50	$1.00
2	" 5/8 " 11/16	10	.75	.50	1.25
3	" 13/16 " 7/8	13	1.00	.75	1.75
4	" 1 1/8 " 1 1/4	16	1.75	1.00	2.75
5	" 1 7/16 " 1 5/16	20 1/2	2.50	1.25	3.75

PIPE WRENCHES

STILLSON

Size, Inches	Takes Pipe Inches	Wrenches Each	Extra Parts, Each		
			Frames	Nuts	Jaws
6	1/8 to 1/2	$2.00	$0.35	$0.11	$0.75
8	1/8 to 3/4	2.00	.35	.11	.75
10	1/8 to 1	2.25	.40	.14	.80
14	1/4 to 1 1/2	3.00	.50	.17	1.00
18	1/4 to 2	4.00	.55	.22	1.33
24	1/4 to 2 1/2	6.00	.80	.35	2.10
36	1/2 to 3 1/2	12.00	1.30	.55	4.75
48	1 to 5	18.00	1.50	.95	7.25

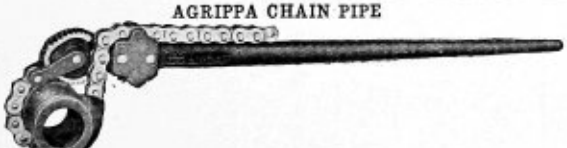
TRIMO

Size in.	Takes Pipe Inches	Wrenches Each	Extra Parts			
			Jaws Each	Nuts Each	Inserted Jaws Each	Fram's Each
6	1/8 to 1/2	$2.00	$0.67	$0.20	$0.25	$0.25
8	1/8 " 3/4	2.00	.67	.20	.25	.25
10	1/8 " 1	2.25	.75	.27	.33	.33
14	1/4 " 1 1/2	3.00	1.00	.35	.50	.45
18	1/4 " 2	4.00	1.33	.42	.55	.55
24	1/4 " 2 1/2	6.00	2.00	.50	.65	65
36	1/2 " 3 1/2	12.00	4.00	.65	1.00	.75
48	1 " 5	18.00	6.00	.80	1.25	1.00

VULCAN CHAIN PIPE

Size No.	Capacity inches	Length inches	Weight lbs.	Price	Extra Chains Each	Extra Jaws per Pair
10	1/8 to 3/4	13 3/4	1 3/4	$2.50	$0.75	$1.00
11	1/8 " 1 1/2	20	4 3/4	3.50	1.00	1.75
12	1/4 " 2 1/2	27	8 3/4	5.00	1.50	2.75
13	3/4 " 4	37	16	7.00	2.50	4.00
13 1/2	1 " 6	44 1/2	20	9.00	3.25	4.75
14	1 1/2 " 8	50 1/2	29	11.00	4.00	5.50
15	2 " 12	64	49	18.00	6.00	7.50

AGRIPPA CHAIN PIPE



Size	No. 20	No. 21	No. 22	No. 23	No. 23 1/2	No. 24	No. 25
Each	$2.50	3.50	5.00	7.00	9.00	11.00	18.00
Capacity, pipe fittings	1/8 to 3/4 in	1/8 to 1 1/2 in.	1/4 to 2 1/2 in.	3/4 to 4 in.	1 to 6 in.	1 1/2 to 8 in	2 to 12 in.
Length, over all	13 3/4 in.	20 in.	27 in.	37 in.	44 1/2 in.	50 1/2 in.	64 1/2 in.
Weight, about	2 lbs.	5 lbs.	9 lbs.	17 lbs.	22 lbs.	30 lbs.	50 lbs.
Extra jaws, each	$1.00	1.75	2.75	4.00	4.75	5.50	7.50
Extra chains, each	$1 00	1.25	1.75	2.75	3.75	4.50	6.75
Length, chain	10 in.	15 in.	19 1/2 in.	26 in.	34 in.	45 in.	61 in.
Av. bkg. strain of chain	3600 lbs.	6700 lbs.	9800 lbs.	12500 lbs.	14300 lbs.	15700 lbs.	21800 lbs.

DROP FORGED STEEL WRENCHES

GENERAL PURPOSE WRENCH

Number	Standard Nut Size Bolt	Openings Finished	Extreme Length	Thickness of Head	Price Unfinished	Price Finished
300	3/16x1/4	3/8x1/2	6 1/4	7/32	$0.13	$0.26
301	1/4x5/16	1/2x5/8	7 1/8	1/4	.17	.34
302	5/16x3/8	5/8x3/4	8 1/4	5/16	.22	.44
303	3/8x7/16	3/4x7/8	9 1/4	3/8	.28	.56
304	7/16x1/2	7/8x1	10 3/8	7/16	.34	.68

SINGLE HEAD SOCKET WRENCHES

FOR HEXAGON NUTS AND CAP-SCREWS

Number	Hexagon Openings			Extreme Length	Diameter of Head	Hex. End Same Size as U. S. Nut; for Size Bolt	Size of Pin-Handle Length	Price Unfinished with Pin-Handle and Hole for Same	Price Finished with Pin-Handle and Hole for Same
	For U. S. Standard Nut, Size Bolt	For Cap Screw, Dia. Screw	Short Dia. Broached Opening						
321A	1/8		21/64	4	1/2	5/16	4	$0.30	$0.50
322A		3/16	25/64	4 1/2	5/8	1/4	4 1/2	.33	.55
B	3/16		27/64	4 7/8	11/16	5/16	4 7/8	.37	.61
C		1/4	28/64	4 7/8	11/16	5/16	4 7/8	.37	.61
323A	1/4	5/16	33/64	5 1/4	3/4	5/16	5 1/4	.39	.65
324A		3/8	37/64	5 3/4	7/8	3/8	5 3/4	.43	.72
B	5/16		38/64	5 3/4	7/8	3/8	5 3/4	.43	.72
325A		7/16	41/64	6 1/8	1	7/16	6 1/8	.47	.79
B	3/8		45/64	6 1/2	1 1/8	1/2	6 1/2	.53	.89
C		1/2	49/64	6 1/2	1 1/8	1/2	6 1/2	.53	.89
326A	7/16		53/64	7	1 1/4	1/2	7	.57	.97
B		9/16	53/64	7	1 1/4	1/2	7	.57	.97
C	1/2	5/8	57/64	7 3/8	1 3/8	9/16	7 3/8	.64	1.10
327A	9/16		63/64	7 7/8	1 1/2	5/8	7 7/8	.72	1.24
B		3/4	1 1/64	7 7/8	1 1/2	5/8	7 7/8	.72	1.24

SINGLE HEAD SOCKET WRENCHES

FOR SQUARE NUTS, CAP SCREWS AND SET SCREWS

Number	Square Openings				Extreme Length	Diam. of Head	Hex. End Same Size as U. S. Nut; for Size Bolt	Size of Pin-Handle Length	Price Unfinished with Pin-Handle and Hold for Same	Price Finished with Pin-Handle and Hole for Same
	For U. S. Standard Nut, Size Bolt	For Cap Screw, Dia. Screw	For Set Screw; Size	Short Dia. Broached Opening						
320A			1/8	1/8	3 5/8	11/32	1/8	3	$0.26	$0.44
321C			3/16	23/64	4	1/2	3/16	4	.30	.50
B			1/4	23/64	4	1/2	3/16	4	.30	.50
322D			5/16	31/64	4 1/2	5/8	1/4	4 1/2	.33	.55
323B		1/4	3/8	35/64	4 7/8	11/16	5/16	4 7/8	.37	.61
324C		5/16	7/16	39/64	5 3/4	7/8	3/8	5 3/4	.43	.72
325D	1/4	3/8	1/2	47/64	6 1/8	1	7/16	6 1/8	.47	.79
E		7/16	9/16	55/64	6 1/2	1 1/8	1/2	6 1/2	.53	.89
326D	5/16			55/64	6 1/2	1 1/8	1/2	6 1/2	.53	.89
E		1/2	5/8	63/64	7	1 1/4	1/2	7	.57	.97
F	3/8	9/16		63/64	7	1 1/4	1/2	7	.57	.97
327C		5/8	3/4	1 3/64	7 3/8	1 3/8	9/16	7 3/8	.64	1.10
D	7/16			1 3/64	7 7/8	1 1/2	5/8	7 7/8	.72	1.24

Larger sizes (up to 1 1/4 inch Hexagon Nut) also furnished.

Corrected List, June, 1909

DROP-FORGED STEEL WRENCHES

DOUBLE HEAD WRENCH

15° Angle
Milled for Hexagon Cap Screws

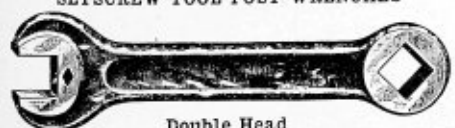
Number	For Hexagon Head Cap Screws Diameter of Screws Inches	Openings Finished Inches	Extreme Length Inches	Thickness of Heads Inches	Price Unfinished Each	Price Finished Each
723	3/8 & 1/4	3/8 & 3/16	4	1/2 & 1/4	$0.14	$0.28
723b	1/2 & 5/16	3/8 & 1/2	4	1/2 & 1/4	.14	.28
724	1/2 & 5/8	1/2 & 3/8	4 3/8	32 & 32	.16	.32
725	1/2 & 3/8	1/2 & 1/2	4 3/8	3/4 & 3/8	.18	.36
725b	1/2 & 3/8	1/2 & 5/8	4 3/8	3/4 & 3/8	.18	.36
725c	1/2 & 3/8	1/2 & 3/8	4 3/8	3/4 & 3/8	.18	.36
726	1/2 & 1/2	1/2 & 5/8	5 3/8	3/4 & 1/2	.20	.40
727	5/8 & 1/2	5/8 & 5/8	5 3/8	32 & 32	.22	.44
728	5/8 & 1/2	5/8 & 3/4	6 3/8	32 & 32	.24	.48
729	5/8 & 5/8	5/8 & 3/4	6 3/8	32 & 32	.26	.52
730	5/8 & 5/8	5/8 & 32	7 3/8	32 & 32	.28	.56
731	3/4 & 5/8	3/4 & 32	7 3/8	32 & 32	.30	.60
731b	3/4 & 3/4	3/4 & 32	7 3/8	32 & 32	.30	.60
731c	3/4 & 3/4	3/4 & 3/4	7 3/8	32 & 32	.30	.60
732	3/4 & 3/4	3/4 & 1	8 3/8	32 & 32	.32	.64
732b	3/4 & 3/4	32 & 1	8 3/4	32 & 32	.32	.64
733	3/4 & 3/4	7/8 & 1	8 3/8	32 & 32	.36	.72
734	3/4 & 3/4	7/8 & 1 1/8	9 3/8	32 & 32	.40	.80
735	3/4 & 3/4	1 & 1 1/8	9 3/8	32 & 32	.44	.88
736	3/4 & 1	1 & 1 1/8	11 3/8	32 & 32	.51	1.02
737	7/8 & 1	1 1/8 & 1 1/4	11 3/8	32 & 32	.58	1.16
738	7/8 & 1 1/8	1 1/8 & 1 3/8	13 1/2	32 & 32	.65	1.30
739	1 & 1 1/8	1 1/4 & 1 3/4	13 1/2	32 & 32	.76	1.52
739a	1 & 1 1/4	1 1/4 & 1 1/4	13 1/2	32 & 32	.76	1.52
739b	1 1/8 & 1 1/4	1 3/8 & 1 1/2	13 1/2	32 & 32	.76	1.52

SINGLE HEAD

15° Angle
Milled for Hexagon Cap Screws

Number	For Hexagon Head Cap Screws Diameter of Screws Inches	Opening Finished Inches	Extreme Length Inches	Thickness of Head Inches	Price Unfinished Each	Price Finished Each
700	1/8	1/4	2 3/4	1/2	$0.09	$0.18
701	1/4	5/16	3 1/4	1/4	.10	.20
701a	1/4	1/2	3 1/4	1/4	.10	.20
702	5/16	1/2	4 1/4	5/16	.12	.24
703	3/8	1/2	5 1/8	11	.14	.28
704	7/16	3/4	6 1/2	11	.17	.34
705	1/2	3/4	7 1/2	11	.20	.40
705a	1/2	3/4	7 1/2	11	.20	.40
706	3/4	1	8 3/8	11	.26	.52
707	3/4	1 1/8	9 1/4	11	.32	.64
708	1	1 1/4	11 1/8	11	.42	.86
708a	1 1/8	1 3/8	11 1/8	11	.42	.86
709	1 1/4	1 1/2	13	11	.58	1.14
710	1 3/4	1 3/8	14 3/4	3/4	.75	1.50

SETSCREW TOOL POST WRENCHES



Double Head

No.	Open End for Set Screws Size, Inches	Closed End for Set Screws Size, Inches	Length Over All Inches	Unfinished Each	Finished Each
152	1/8	1/16	4 5/8	$0.21	$0.42
154	1/8	1/8	5 1/8	.23	.46
156	3/16	1/8	6 1/4	.23	.46
158	3/16	3/16	6 1/4	.30	.60
160	1/4	3/8	7 5/8	.30	.60
162	3/4	3/4	7 3/8	.35	.70

DOUBLE HEAD TOOL POST WRENCHES

No.	Open End for U. S. Stand Nut Size Bolt	Open End for U. S. Stand Nut Opening Milled	Closed End for Set Screw Size	Extreme Length	Unfinished Each	Finished Each
124	3/8	11/16	9/16	6 1/2	$0.25	$0.50
129	1/2	7/8	7/16	7	.30	.60
130	1/2	7/8	1/2	....	.30	.60
131	1/2	7/8	9/16	....	.30	.60
132	1/2	7/8	5/8	7	.30	.60
139	5/8	1 1/16	5/8	7 1/2	.35	.70
140	5/8	1 1/16	3/4	8	.40	.80
143	3/4	1 1/4	3/4	9	.50	1.00
144	3/4	1 1/4	7/8	....	.50	1.00
145	3/4	1 1/4	1	10	.60	1.20
146	7/8	1 7/16	7/8	....	.60	1.20
147	7/8	1 7/16	1	....	.60	1.20
148	1	1 5/8	7/8	11	.75	1.50
149	1	1 5/8	1	....	.75	1.50
150	1 1/8	1 13/16	1	....	.75	1.50
151	1 1/4	2	1	....	.75	1.50

CONSTRUCTION WRENCHES WITH OFFSET

Straight Opening

No.	For U. S. Standard Nuts, Size Bolts, in.	Opening Inches	Extreme Length Inches	Thickness Head Inches	Unfinished Each	Semi-finished Each
523	3/8	3/8	9	11/32	$0.20	$0.30
525	1/2	15/32	11 1/2	7/16	.32	.48
526	9/16	1 1/64	12 3/4	1/2	.40	.60
527	5/8	1 1/8	14 1/8	9/16	.50	.75
528	3/4	1 5/16	16	5/8	.65	.97
529	7/8	1 1/2	17 1/2	11/16	.85	1.28
530	1	1 11/16	19	3/4	1.10	1.65

CONSTRUCTION AND CAR BUILDERS' WRENCHES

15° Angle

The round tang is for bringing bolt and rivet holes into line. The correct tool for use in the construction of roofs, bridges, cars, etc., and can be inserted into convenient openings when wrench is not in use, always keeping tool in sight and preventing loss.

No.	For U. S. Standard Nuts, Size Bolts, in.	Opening Finished Inches	Extreme Length Inches	Thickness Head Inches	Unfinished Each	Finished Each
223	3/8	11/32	9	11/32	$0.20	$0.40
225	1/2	7/8	11 1/2	7/16	.32	.64
226	9/16	33/64	12 1/2	1/2	.40	.80
227	5/8	1 1/16	14	9/16	.50	1.00
228	3/4	1 1/4	16	5/8	.65	1.30
229	7/8	1 7/16	17 1/2	11/16	.85	1.70
230	1	1 5/8	19	3/4	1.10	2.20

Corrected List, June, 1909

DROP-FORGED STEEL WRENCHES

ENGINEERS' PATTERN

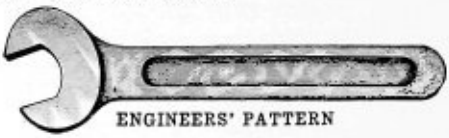
Double Head—15° Angle. Milled for U. S. Standard Nuts

No.	Size Bolts U. S. Standard Nuts	Openings Inches	Extreme Length Inches	Price Unfinished, Each	Price Finished Each
21	1/8 & 3/16	5/16 & 11/32	3 1/4	$0.12	$0.24
22	1/8 & 1/4	5/16 & 1/2	4	.13	.26
23	3/16 & 1/4	13/32 & 1/2	4	.14	.28
24	3/16 & 5/16	13/32 & 19/32	4 7/8	.16	.32
25	1/4 & 5/16	1/2 & 19/32	4 7/8	.18	.36
26	1/4 & 3/8	1/2 & 11/16	5 7/8	.20	.40
27	5/16 & 3/8	19/32 & 11/16	5 7/8	.22	.44
28	5/16 & 7/16	19/32 & 25/32	6 7/8	.24	.48
29	3/8 & 7/16	11/16 & 25/32	6 7/8	.26	.52
30	3/8 & 1/2	11/16 & 7/8	7 3/4	.28	.56
31	7/16 & 1/2	25/32 & 7/8	7 3/4	.30	.60
32	7/16 & 9/16	25/32 & 31/32	8 3/4	.32	.64
33	1/2 & 9/16	7/8 & 31/32	8 3/4	.36	.72
34	1/2 & 5/8	7/8 & 1 1/16	9 3/4	.40	.80
35	9/16 & 5/8	31/32 & 1 1/16	9 3/4	.44	.88
36	9/16 & 3/4	31/32 & 1 1/4	11 1/2	.51	1.02
37	5/8 & 3/4	1 1/16 & 1 1/4	11 1/2	.58	1.16
38	5/8 & 7/8	1 1/16 & 1 7/16	13 1/2	.65	1.30
39	3/4 & 7/8	1 1/4 & 1 7/16	13 1/2	.76	1.52
40	3/4 & 1	1 1/4 & 1 5/8	15 1/2	.88	1.76
41	7/8 & 1	1 7/16 & 1 5/8	15 1/2	1.00	2.00
42	7/8 & 1 1/8	1 7/16 & 1 13/16	17	1.18	2.36
43	1 & 1 1/8	1 5/8 & 1 13/16	17	1.36	2.72
44	1 & 1 1/4	1 5/8 & 2	19	1.55	3.10
45	1 1/8 & 1 1/4	1 13/16 & 2	19	1.80	3.60
46	1 1/8 & 1 3/8	1 13/16 & 2 3/16	21	2.05	4.10
47	1 1/4 & 1 3/8	2 & 2 3/16	21	2.30	4.60
48	1 1/4 & 1 1/2	2 & 2 3/8	23	2.65	5.30
49	1 3/8 & 1 1/2	2 3/16 & 2 3/8	23	3.00	6.00
50	1 3/8 & 1 5/8	2 3/16 & 2 9/16	25	3.35	6.70
51	1 1/2 & 1 5/8	2 3/8 & 2 9/16	25	3.80	7.60
52	1 1/2 & 1 3/4	2 3/8 & 2 3/4	27	4.25	8.50
53	1 5/8 & 1 3/4	2 9/16 & 2 3/4	27	4.70	9.40
54	1 5/8 & 2	2 9/16 & 3 1/8	31 1/2	5.90	11.80
55	1 3/4 & 2	2 3/4 & 3 1/8	32 1/2	6.50	13.00
56	1 3/4 & 2 1/4	2 3/4 & 3 1/2	34	8.20	16.40
57	2 & 2 1/4	3 1/8 & 3 1/2	36	10.25	20.50

SET SCREW WRENCHES

Single Head

Number	For Set Screws Size, Inches	Extreme Length Inches	Unfinished Each	Finished Each
92	3/16	3	$0.08	$0.16
93	1/4	3 5/8	.10	.20
94	5/16	4 1/2	.12	.24
95	3/8	5 3/8	.15	.30
96	7/16	6 1/4	.20	.40
97	1/2	7	.25	.50
98	9/16	7 1/2	.27	.54
99	5/8	8	.30	.60
100	3/4	9 1/4	.35	.70
101	7/8	10 1/2	.42	.84
102	1	11 1/2	.50	1.00
103	1 1/8	12	.60	1.20



ENGINEERS' PATTERN

Single Head—15° Angle. Milled for U. S. Standard Nuts

No.	Size Bolts U. S. Standard Nuts	Openings Inches	Extra Length Inches	Price Unfinished, Each	Price Finished Each
00	1/8	5/16	2 1/2	$0.08	$0.16
0	3/16	13/32	2 7/8	.09	.18
1	1/4	1/2	3 3/4	.10	.20
2	5/16	19/32	4 3/4	.12	.24
3	3/8	11/16	5 5/8	.14	.28
4	7/16	25/32	6 1/2	.17	.34
5	1/2	7/8	7 1/2	.20	.40
6	9/16	31/32	8 3/8	.26	.52
7	5/8	1 1/16	9 1/4	.32	.64
8	3/4	1 1/4	11 1/8	.42	.84
9	7/8	1 7/16	13	.58	1.16
10	1	1 5/8	14 3/4	.75	1.50
11	1 1/8	1 13/16	16 1/2	1.00	2.00
12	1 1/4	2	18 1/2	1.25	2.50
13	1 3/8	2 3/16	20	1.62	3.24
14	1 1/2	2 3/8	22	2.00	4.00
15	1 5/8	2 9/16	24	2.50	5.00
16 1/2	1 3/4	2 3/4	25 1/2	3.00	6.00
16	1 7/8	2 15/16	27	3.70	7.40
17	2	3 1/8	29 1/2	4.40	8.80
18	2 1/4	3 1/2	33	6.00	12.00
19	2 1/2	3 7/8	37	7.60	15.20
19 1/2	2 3/4	4 1/4	39	10.00	20.00
20	3	4 5/8	41	13.00	26.00
20 1/2	3 1/4	5	43	16.00	32.00
A21	3 1/2	5 3/8	45	22.00	44.00
A21 1/2	4	6 1/8	49	28.00	50.00

SET SCREW WRENCHES

Double Head

Number	For Set Screws Size, Inches	Extreme Length Inches	Unfinished Each	Finished Each
65	5/16 & 1/4	3 1/8	$0.13	$0.26
66	5/16 & 5/16	3 3/8	.13	.26
67	1/4 & 5/16	4	.15	.30
68	1/4 & 3/8	4	.15	.30
69	5/16 & 3/8	5	.18	.36
70	5/16 & 7/16	5	.18	.36
71	3/8 & 7/16	5 7/8	.22	.44
72	3/8 & 1/2	5 7/8	.22	.44
73	7/16 & 1/2	6 5/8	.27	.54
74	7/16 & 9/16	6 5/8	.27	.54
75	1/2 & 9/16	7 1/2	.33	.66
76	1/2 & 5/8	7 1/2	.33	.66
77	9/16 & 5/8	8 3/8	.40	.80
78	9/16 & 3/4	8 3/8	.40	.80
79	5/8 & 3/4	10	.48	.96
80	5/8 & 7/8	10	.48	.96
81	3/4 & 7/8	11 3/8	.58	1.16
82	3/4 & 1	11 3/8	.58	1.16
83	7/8 & 1	12 5/8	.68	1.36
84	7/8 & 1 1/8	12 5/8	.68	1.36

PIPE WRENCHES

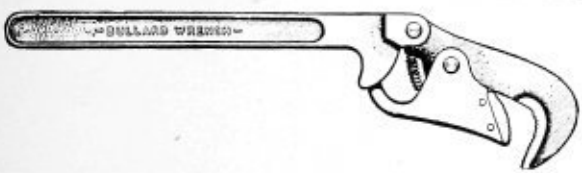
PARMALEE

This wrench has no teeth. It will make or break the tightest joint without marring or crushing the pipe or injuring the threads.

Length of Handles inches	Sizes Number of Set	Sizes of Pipe Handled inches	Per Set Complete in Case	Extra Handles Each	Extra Girths Each
10	1	⅜ to 1	$5.00	$2.25	⅜" ½" ¾" 1" $0.75
20	2½	¾ " 2	7.50	2.50	¾" 1" 1¼" $1 1½" 2" $1.25
25	3½	1½ " 3	7.50	3.00	1½" 2" 2½" 3" $1.25

Extra parts will be furnished as required. Special girths may be ordered to fit ⅛ inch and ¼ inch pipe sizes (also all odd sizes of Brass or Steel Tubing) and rods of any diameter from ⅝ to 3½ inch outside diameter.

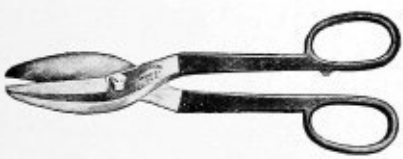
BULLARD AUTOMATIC



Number	Size, inches	Each	Removable Jaws, Each
0.	0 to ¾	$0.75	$0.25
1.	⅛ " 1¼	1.15	.35
2.	⅜ " 1⅞	1.35	.50
3.	½ " 2½	1.80	.50
4.	¾ " 3	2.75	

ROBBINS'

Number	2	3	4	5	6	7
Length of Lever ..... feet	2¾	3	4	5	6	7
Takes Pipe from ..... inches	1 to 2	1¼ to 4	2 to 6	2½ to 8	4 to 10	4 to 16
Price ..... each	$5.50	$6.25	$9.00	$12.50	$16.00	$30.00



Regular Pattern Tinner Snips

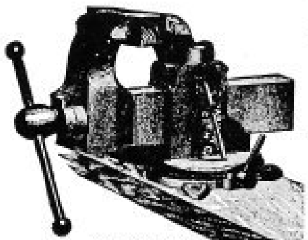
Number	Full Length	Length of Cut	Price per pair
12	8 in.	2 in.	$1.00
11	9½ "	2¼ "	1.20
10	11½ "	2½ "	1.40
9	11½ "	3 "	1.50
8	13¾ "	3½ "	2.00
7	14½ "	4 "	2.50
6½	15¾ "	4½ "	3.00

Circular Blade Snips

Number	Full Length	Length of Cut	Price per Pair
10	11½ in.	2½ in.	$2.25
9	12½ "	3 "	2.50
8	13¾ "	3½ "	3.00
7	14½ "	4 "	3.50
6½	15¾ "	4½ "	4.25

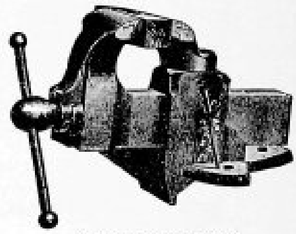
BENCH VISES

PARKER'S PATENT PARALLEL VISE



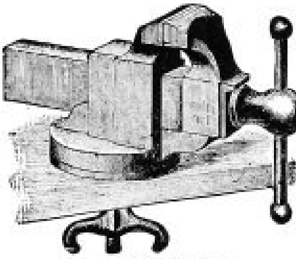
Swivel Base

Swivel Base				Stationary Base			
No.	Width of Jaws inches	Weight lbs.	Each	No.	Width of Jaws inches	Weight lbs.	Each
21	3⅛	32	$7.00	000	3¼	28	$6.25
22	3⅝	50	8.75	1	3⅝	45	7.00
23	4¼	65	11.00	2	4⅛	58	9.00
24	4¾	87	14.50	3	4¾	74	11.75
25	5⅝	130	20.50	4	5⅝	104	16.25
26	6⅛	160	30.00	5	6⅛	134	24.00



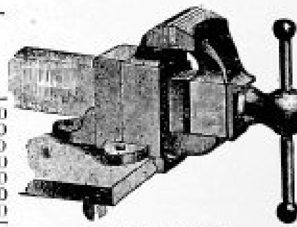
Stationary Base

PRENTISS "BULL-DOG" VISE



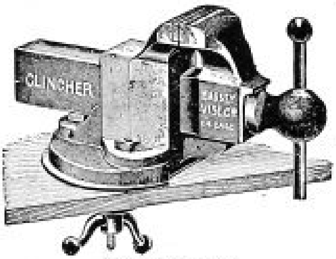
Swivel Base

Swivel Base					Stationary Base				
No.	Jaws inches	Opens inches	Weight lbs.	Each	No.	Jaws inches	Opens inches	Weight lbs.	Each
90	3¼	4	28	$7.50	50	3¼	4	22	$6.00
91	3⅝	5	36	8.75	51	3⅝	5	28	7.00
92	4⅛	5½	52	10.50	52	4⅛	5½	42	8.50
93	4⅝	6¼	64	12.50	53	4⅝	6¼	52	10.00
94	5	7	85	16.00	54	5	7	72	13.00
95	5½	8½	115	22.00	55	5½	8½	100	18.50
96	6	9	155	30.00	56	6	9	135	25.00



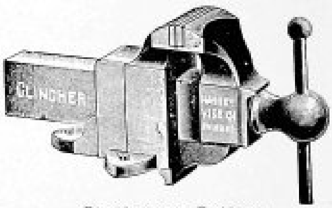
Stationary Base

CLINCHER VISE



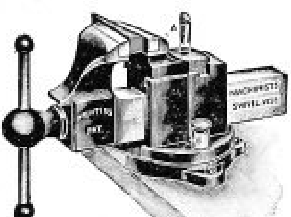
Swivel Bottom

Number	Width Jaw inches	Opens inches	Swivel Bottom		Stationary Bottom	
			Weight lbs.	Each	Weight lbs.	Each
30	3¼	4	28	$7.50	22	$6.00
31	3⅝	5	36	8.75	29	7.00
32	4⅛	5½	52	10.50	40	8.50
33	4⅝	6¼	64	12.50	55	10.00
34	5	7	85	16.00	70	13.00
35	5⅝	8⅝	110	21.00	95	17.50
36	6	9⅝	150	30.00	135	25.00



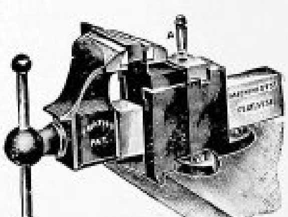
Stationary Bottom

PRENTISS' PATENT SELF-ADJUSTING JAW

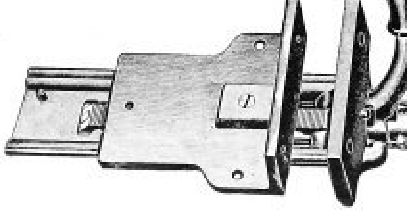


Swivel Bottom

Width Jaw inches	Opens inches	Swivel Bottom			Stationary Bottom		
		No.	Weight lbs.	Each	No.	Weight lbs.	Each
2⅝	3⅝	18	17	$6.75	1	13½	$5.50
3½	4¾	19	32	8.50	2	28	7.00
4	5¼	19½	46	10.50	2½	41	9.00
4½	6	20	65	12.50	3	54	10.50
5¼	8	21	109	19.00	4	96	17.00
6	9	22	168	27.00	5	146	24.00
7	11	23	207	35.00	6	184	30.00



Stationary Bottom

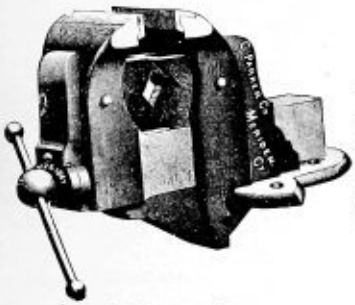


BENCH VISES

Rapid-Acting Woodworker's Vise

No.	Size Jaws inches	Jaws Open inches	Weight lbs.	Each
4	3 x 7½	9	26	$3.50
5	3½ x 8	12	35	4.50

PIPE VISES



Stationary Base

PARKER'S PATENT COMBINATION PIPE VISE

No.	Style	Size Jaws in.	Holds, inches	Weight, lbs.	Each
88½	Stationary Base	4¾	¼ to 4	94	$28.00
89½	" "	5⅞	½ to 6	141	35.00
87	Swivel "	3½	⅛ to 2	41	16.00
88	" "	4½	⅛ to 3	59	20.00

Swivel Base

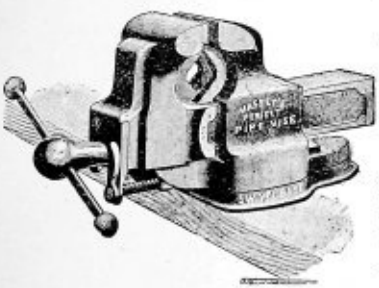
MALLEABLE IRON, OPEN HINGE

Shut

	No. 1	No. 2
Holds pipe from, inches	⅛ to 2	⅛ to 3
Weight, lbs.	20	26
Price each	$10.00	14.00
Extra Jaws, per set of 3, net	$1.00	1.50

Open

MASSEY'S PERFECT PIPE VISE, SWIVEL BASE



No.	Size Jaws inches	Holds, in.	Weight, lbs.	Each	Extra Jaws, Set
25	3½	⅛ to 2	47	$16.00	$2.50
26	4½	⅛ to 3	70	20.00	2.50

VULCAN CHAIN PIPE VISE

No.	For Pipe Sizes	Each	Extra Parts, Each					
			Base	Jaws	Chain	Handle	Screw	Nut	Washer
2	⅛ to 2½	$5.00	$1.00	$2.25 pr	$1.25	$0.50	$0.20	$0.60	$0.20

Weight, 10 lbs. Size, folded, 6 x 8 x 8 inches.

BOX VISES

Width of Jaws inches	Weight Lbs	Vises Each	Extra Boxes and Screws	Width of Jaws inches	Weight Lbs.	Vises Each	Extra Boxes and Screws
3¾	35	$10.00	$3.50	6	100	$24.00	$6.50
4	40	10.50	3.50	6	115	25.00	6.50
4¼	45	11.00	4.00	6½	125	27.50	8.00
4½	50	11.50	4.00	7	150	36.00	9.50
5	60	13.00	4.00	7¼	170	44.50	9.50
5¼	75	16.00	4.50	7½	180	47.00	9.50
5½	80	17.50	4.50	8	200	56.00	11.00
5¾	90	20.00	6.50				

In ordering extra Screws state diameter.

Boxes and Screws

DETROIT COMBINATION TOOL

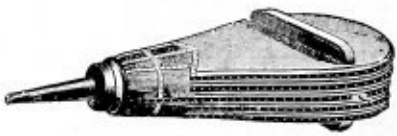
Consists of:

Forge, with geared rotary blower.
Anvil, 4x9 inch chilled face.
Vise, 4 inch jaws, steel faced. Opens 10 inches.
Pipe Vise, with tempered tool steel jaws.
Emery Wheel, with geared power.
Drill Press, with cased gears and screw feed.
Geared Power, for emery wheel, grind stone and like tools.
Anvil Hardy.
Crucible Holder.
Twist Drill.
Blacksmith Tongs.

All gears are covered and have clutch arrangement at the end of the gear case by which they can be thrown in or out of gear as desired.

AA.....each, $35.00
B, Extra heavy..... " 50.00

BELLOWS



Blacksmiths' Bellows

STANDARD PATTERN

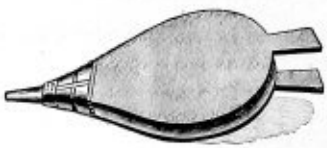
Width, inches,	20 to 24	26	28	30	32	34
Price each	$10.00	11.00	12.00	13.00	14.00	16.00

Width, inches	36	38	40	42	44
Price each	$18.00	20.00	23.00	27.00	32.00

EXTRA LONG PATTERN

Width inches	24	26	28	30	32	34	36
Price each	$12.00	13.00	14.00	15.00	17.00	19.00	21.00

Width inches	38	40	42	44	46	48	50
Price each	$24.00	28.00	34.00	40.00	45.00	50.00	60.00



MOULDERS' BELLOWS

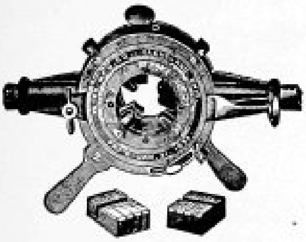
10 inches wide.....per doz., $15.00
12 " " ..... " 18.00
14 " " ..... " 24.00

HAND BELLOWS—Same Style as Moulders'

6 inches.....per doz., $10.00
7 " ..... " 11.00
8 " ..... " 12.00
9 " ..... " 13.00

SCREW PLATES

THE OSTER PATENT DIE STOCK. FOR PIPE



No. of Tool	Weight Lbs.	Sizes of Pipe each Tool will thread and cut	Without Cut-off	With Cut-off
0	4½	⅛, ¼, ⅜, ½	$12.00	$15.00
1	7	⅛, ¼, ⅜, ½, ¾	13.00	16.00
1½	9	¼, ⅜, ½, ¾, 1	14.00	17.00
2	12	¼, ⅜, ½, ¾, 1, 1¼	17.00	20.00
3A	....	1, 1¼, 1½, 2	20.00	......
3	22	1, 1¼, 1½, 2	22.00	25.00
4	22	½, ¾, 1, 1¼, 1½, 2	25.00	28.00
4½	23	⅜, ½, ¾, 1, 1¼, 1½, 2	28.00	31.00
5	64	1½, 2, 2½, 3	40.00	45.00
6	70	2½, 3, 3½, 4	55.00	60.00

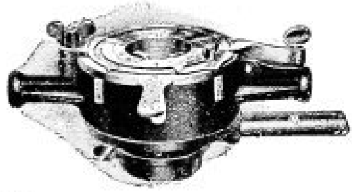
Extra Dies per Set (four pieces) right or left hand					
No.	0	$1.25	No.	4	$2.00
"	1	1.50	"	4½	2.50
"	1½	1.50	"	5	3.00
"	2	1.75	"	6	3.50
"	3	2.00	"	3A	2.00

Extra Cut-off Blades			
No. 0	to 4,	each,	$0.30
No. 4½	to 6,	each,	.40

Nos. 0 to 2 have pipe handles; Nos. 3 to 6 have solid steel handles; Nos. 5 and 6 have four handles and two cut-off blades.

THE OSTER PATENT DIE STOCK, WITH RATCHET

No. of Tool	Weight Lbs.	Sizes of Pipe each Tool will thread and cut	Without Cut-off	With Cut-off	Extra Dies per Set, right or left hand
7A	....	1, 1¼, 1½, 2	$22.00	....	No. 7A $2.50
7	40	1, 1½, 2	25.00	$28.00	" 7 .... 2.50
7½	45	½, ¾, 1, 1¼, 1½, 2	28.50	31.50	" 7½............ 2.50
8	95	2½, 3, 3½, 4	60.00	65.00	" 8 .... 3.50
10	150	2½, 3, 3½, 4, 4½, 5	75.00	90.00	" 10 .... 4.50



THE OSTER PATENT DIE STOCK WITH RATCHET

New Pattern

Is designed especially for work in ditches, mills or close corners. All unnecessary projections have been eliminated so as to work the stock in the smallest possible space.

Is self centering; is started with a leader screw.

We guarantee that the dies will not slip. They are instantly released by turning one bolt.

The duplicating stop is substantial and positive.

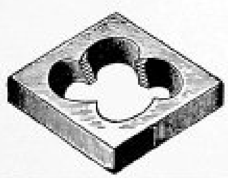
No. of Tool	Weight Lbs.	Size of Pipe will cut and thread	Without Cut-off	With Cut-off	Extra Dies per Set
11	90	2½, 3, 3½, 4, 4½, 5	$70.00	$85.00	$4.50

ARMSTRONG'S ADJUSTABLE STOCK AND PIPE DIES

No.	Thread inch	Right or Left	Right and Left	Extra Parts: Dies Each	Bushings Each	Thumb Screws Each	Adj'ng Screws Each	Collar Screws Each
1	⅛ to ½	$9.00	$14.00	$1.25	$0.20	$0.10	$0.10	$0.12
2	¼ " 1	12.00	20.00	1.50	.25	.10	.10	.12
2½	½ " 1¼	12.00	18.00	3.00	.40	.10	.10	.15
3	1 " 2	24.00	....	4.00	.50	....	....	.15
6	2½ " 3	40.00	....	15.00	1.00	....	....	.25
7	2½ " 4	60.00	....	16.00	1.50	....	....	.25

MALLEABLE IRON PIPE STOCK

With Square Solid Dies



No.	Complete Each	Pipe Sizes	Dimensions Dies	Stocks Each	Dies, Each	Bushings Each	Frames Each
0	$9.50	⅛, ¼, ⅜, ½	2 x2 x ½	$3.50	$1.50	$0.25	......
1	15.00	¼, ⅜, ½, ¾, 1	2½x2½x ¾	5.00	2.00	.35	$0.30
1½	13.50	¾, 1, 1¼	3 x3 x ¾	6.00	2.50	.45	.40
1¾	13.50	1, 1¼, 1½	3 x3 x ¾	6.00	2.50	.45	40
1¾	21.00	⅛, ⅜, ½, ¾, 1, 1¼		6.00	2.50	.45	.40
2	20.00	1¼, 1½, 2	4 x4 x ⅞	9.50	3.50	.60	.50
3	43.00	2½, 3	5 x5 x1¼	25.00	9.00	1.00	.60
4	51.00	2½, 3	5 x5 x1¼	33.00	9.00	1.00	.60

No. 2, No. 3, and No. 4 stocks with Leader Screw. No. 4 Stock, Four Arms.

OSTER PIPE MACHINES

No. 17 GEARED DIE STOCK

As a Die Stock

As a Bench Tool

No. 17 Front View with Tripod

With four sets of dies:
Threading 2½", 3", 3½", 4", 4½", 5" and 6" pipe.

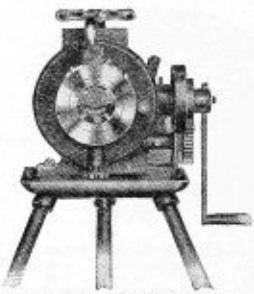
No. 17 Die Stock only, weight 160 lbs	each,	$150.00
No. 17 with Bench Bracket, weight 190 lbs	"	155.00
No. 17 with Bench Bracket and Pan	"	160.00
No. 17 complete with tripod, weight 250 lbs	"	170.00
Pipe Rest Stand extra	"	10.00
Extra dies per set of 4 pieces		5.00
One die to complete a set		1.50
Casing dies per set		7.50
Recutting old dies per set		1.50

No. 201 Hand Machine

Threads (4 sets of dies)
¼ & ⅜, ½ & ¾, 1 & 1¼, 1½ & 2 inch pipe.

Each without Tripod and Pan	$60.00
" with Tripod and Pan	70.00
Extra Dies, per set (4 pieces) R. or L.	3.00
Oil Reservoir	3.00
Shipping weight without Tripod and Pan, 225 lbs.	
Shipping weight with Tripod and Pan....275 lbs.	

This machine is not equipped with a cutting-off attachment.



No. 204 and No. 206 Hand Machines, Front View

	No. 204		No. 206	
	With Tripod	Without Tripod	With Tripod	Without Tripod
Each	$150.00	$140.00	$250.00	$225.00
Shipping Weight	575 lbs.	500 lbs.	975 lbs.	875 lbs.
Cuts and Threads	1 in. to 4 in.		1 in. to 6 in.	
Sets of Dies	4		6	
Extra Dies per set	$4.00		$5.00	
Extra Cut-off blade	1.50		1.50	

PIPE AND NIPPLE MACHINE

These machines are designed for shop use; for rapid threading of pipe and nipples.

The Oster Patent Lever Controlled Die Head provides instant and easy release of dies. One movement of the lever opens or closes the dies.

The Vise will hold the work in the center of the dies. The jaws open and the pipe can be dropped into them from the top.

No. 300 Hand Machine has two speeds for large and small pipes.

No. 300A Power Machine has two-step pulley and countershaft.

No.	Range	Sets of Dies	Each
300 Hand	¼ in. to 2 in.	4	$100.00
300A Power	¼ in. to 2 in.	4	125.00
Extra for Cut-off Attachment			$25.00
Extra for oil Pump on 300A			20.00

OSTER PIPE MACHINES

No. 200A POWER MACHINE

Complete with Countershaft

Threads (4 sets of dies) 1/4 & 3/8, 1/2 & 3/4, 1 & 1 1/4, 1 1/2 & 2 in. pipe.

Without Tripod and Pan		$100.00
With Tripod and Pan		110.00
Extra Dies, per set (4 pcs.) right or left		3.00
Oil Reservoir		3.00
Shipping weight without Tripod and Pan	lbs	450
Shipping weight with Tripod and Pan	"	520

This machine is not equipped with a cutting-off attachment.

No. 204A POWER MACHINE

Back similar to 206A

Complete with Countershaft, Base, Oil Pump, Pipe Rest and Automatic Cut-off Attachment.

Cuts and Threads (4 sets of dies) 1 & 1 1/4, 1 1/2 & 2, 2 1/2 & 3, 3 1/2 & 4 inch pipe

Each		$260.00
Extra Dies, per set (4 pcs.) right or left		4.00
Extra Cut-off-Blades		1.50
Shipping weight	lbs.	1,100

No. 206A POWER MACHINE

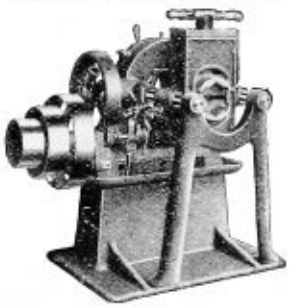
Back same as 207A without Extra Vise Supports

Complete with Countershaft, Base, Oil Pump, Pipe Rest and Automatic Cut-off Attachment.

Cuts and Threads (6 sets of dies) 1 & 1 1/4, 1 1/2 & 2, 2 1/2 & 3, 3 1/2 & 4, 4 1/2 & 5, & 6 inch pipe.

Each		$400.00
Extra Dies per set (4 pcs.) right or left		5.00
Extra Cut-off Blades		1.50
Shipping weight	lbs.	1,700

No. 207A POWER MACHINE



Front same as 206A

Complete with Countershaft, Base, Oil Pump, Pipe Rest, and Automatic Cut-off Attachment.

Cuts and Threads (6 sets of dies) 1 & 1 1/4, 1 1/2 & 2, 2 1/2 & 3, 3 1/2 & 4, 4 1/2 & 5, & 6 inch pipe.

Each		$425.00
Extra Dies per set (4 pcs.) right or left		5.00
Extra Cut-off Blades		1.50
Shipping weight	lbs.	1,800

SCREW PLATES

THE GREEN RIVER SCREW PLATE

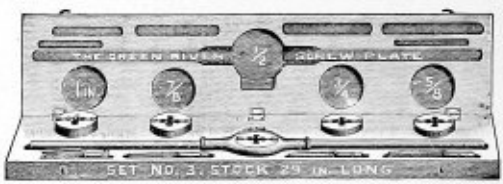
Set No. 100, 3/16 to 7/16 in. Stock 10 in. long, with both Stock and Brace Holder for Dies. 5 sizes, 3/16, 1/4, 5/16, 3/8, 7/16 in. Taps, Dies and Guides.
Complete, in case..... $8.75
Diameter of Dies in this set, 1 5/16 in.
Set No. 1122, with Adjustable Tap Wrench..... 10.90

Set No. 101, 3/16 to 1/2 in. Stock 18 in. long. 6 sizes, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2 in. Taps, Dies and Guides.
Complete, in case..... $11.00
Diameter of Dies in this set, 2 3/16 in.
Set No. 1102, with Adjustable Tap Wrench..... 12.00

Set No. 103, 1/4 to 3/4 in. Stock 22 in. long, 7 sizes, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 in. Taps, Dies and Guides.
Complete, in case..... $13.00
Diameter of Dies in this set, 2 3/16 in.
Set No. 125 with extra 9/16 in. Tap, Die and Guide, 15.25

Set No. 1104, 1/4 to 3/4 in., with Adjustable Tap Wrench No. 53. 7 sizes, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 in. Taps, Dies and Guides. Stock 22 in. long.
Complete, in case..... $14.00
Set No. 1125, with extra 9/16 in. Tap, Die and Guide, 16.25
Will send above sets 1/32 oversize, V thread, unless otherwise ordered.

Set No. 105, 1/4 to 3/4 in. Stock 23 in. long. 7 sizes, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4 in. Taps, Dies and Guides.
Complete, in case..... $14.25
Diameter of Dies in this set, 2 3/4 in.
Set No. 1106, with Adjustable Tap Wrench..... 15.25



Set No. 107, 1/2 to 1 in. Stock 29 in. long. 5 sizes, 1/2, 5/8, 3/4, 7/8, 1 in. Taps, Dies and Guides.
Complete, in case..... $15.75
Diameter of Dies in this set, 2 3/4 in.
Set No. 1108, with Adjustable Tap Wrench No. 54, 16.75

Set No. 109, 3/8 to 1 in. Stock 29 in. long. 7 sizes, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1 in. Taps, Dies and Guides.
Complete, in case..... $20.00
Diameter of Dies in this set, 2 3/4 in.

Set No. 1110, 3/8 to 1 in., with Adjustable Tap Wrench No. 54. 7 sizes, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1 in. Taps, Dies and Guides. Stock 29 in. long.
Complete, in case..... $21.00
Will send above sets 1/32 oversize, V thread, unless otherwise ordered.

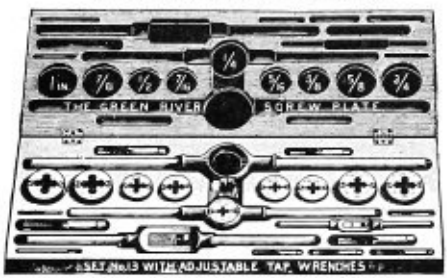
SCREW PLATES

GREEN RIVER

Set 111. ¼ to 1 in. Stock 29 in. long. 9 sizes, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, ¾, 1 in. Taps, Dies and Guides.
Complete in case $23.00
Diameter of Dies in this set, 2¾ in.

Set 116. ⅞ to 1½ in. Stock 53 in. long. 6 sizes, ⅞, 1, 1⅛, 1¼, 1⅜, 1½ in. Taps, Dies and Guides.
Complete, in case $40.00
Adjustable Tap Wrench 6.00
Diameter of Dies in this set, 3 1/16 in.

Set 1112. ¼ to 1 in., with Adjustable Tap Wrenches Nos. 52 and 54. 9 sizes, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, ¾, 1 in. Taps, Dies and Guides. Stock 29 in. long.
Complete, in case $24.00



Set 1118. ⅛ to 1 in., with Adjustable Tap Wrenches Nos. 52 and 54. 9 sizes, ⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, ⅝, ¾, ⅞, 1 in. Taps, Dies and Guides. Two Stocks, one 18 in. long, and one 29 in. long. Complete, in case $26.00

Set 113. ½ to 1¼ in. Stock 35 in. long. 7 sizes, ½, ⅝, ¾, ⅞, 1, 1⅛, 1¼ in. Taps, Dies and Guides.
Complete in case $26.00
Diameter of Dies in this set, 2¼ in.

Set 119. ⅛ to 1¼ in. Two Stocks, one 18 in. long, and one 35 in. long. 11 sizes, ⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, ⅝, ¾, ⅞, 1, 1⅛, 1¼ in. Taps, Dies and Guides.
Complete, in case $36.00
Diameter of Dies in this set, ⅛ in. and under 2 5/16 in.
Diameter of Dies in this set, 9/16 in. and over 2¾ in.

Set 114. ⅜ to 1¼ in. Stock 35 in. long. 9 sizes, ⅜, 7/16, ½, 5/8, ¾, ⅞, 1, 1⅛, 1¼ in. Taps, Dies and Guides.
Complete, in case $30.00
Diameter of Dies in this set, 2¾ in.

Set 115. ¼ to 1¼ in. Stock 35 in. long. 11 sizes, ¼, 5/16, ⅜, 7/16, ½, 5/8, ¾, ⅞, 1, 1⅛, 1¼ in. Taps, Dies and Guides. Complete, in case $34.00
Diameter of Dies in this set, 2¾ in.

Will send above sets 1-32 oversize, V Thread, unless otherwise ordered. V thread exact size, United States Standard or Whitworth (English) Standard supplied at same price if ordered.

Set 120. ¼ to 1½ in. Two Stocks, one 22 in long, and one 53 in. long. 13 sizes, ¼, 5/16, ⅜, 7/16, ½, 5/8, ¾, ⅞, 1, 1⅛, 1¼, 1⅜, 1½ in. Taps, Dies and Guides.
Complete, in case $53.00
Diameter of Dies in this set, ¾ in. and under 2 5/16 in.
Diameter of Dies in this set, ⅞ in. and over 3 1/16 in.

SCREW PLATES

EXTRA PARTS FOR GREEN RIVER SCREW PLATES

The cut above shows a Die and Guide taken apart to show the mechanism.

Prices of Parts of Green River Screw Plates Nos. 1 to 25

Sizes	Dies	Guides	No. of Threads
3/16	$1.25	$0.25	*24
1/4	1.25	.25	16, 18, *20
5/16	1.25	.25	16, *18
3/8	1.50	.25	14, *16, 18
7/16	1.50	.25	12, *14, 16
1/2	1.50	.25	*12, 13, 14
9/16	1.60	.25	*12, 14
5/8	1.75	.25	10, *11, 12
11/16	1.90	.25	*11, 12
3/4	2.00	.25	*10, 12
13/16	2.25	.25	*10
7/8	2.50	.25	*9, 10
15/16	2.75	.25	*9
1	3.00	.25	*8
1 1/8	3.50	.25	*7, 8
1 1/4	4.00	.25	*7
1 3/8	4.50	.25	*6
1 1/2	5.00	.25	*6

These Dies and Taps will be sent 1/32 oversize (for rough iron) with threads indicated by *, V form, unless otherwise ordered.

THE NEW FULL-MOUNTED LIGHTNING SCREW PLATE

Instead of having but a single stock to a set of several dies, each die is furnished complete with its own stock of suitable size and weight. The time and trouble in fitting and changing dies for each occasion is saved. Several sizes out of the same set may be in use at the same time.

Set No.	Threads, inches	Price Each	Price Each with Adjustable Tap Wrench
AAA	3/16, 1/4, 5/16, 3/8, 7/16, 1/2	$12.00	$14.35
BB	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4	16.00	19.00
CE	1/2, 5/8, 3/4, 7/8, 1	18.50	22.50
CC	3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1	22.00	26.00
CCC	1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1	25.50	31.85

THE NEW FULL-MOUNTED LIGHTNING SCREW PLATE

Prices of Parts

Sizes	Stock Die and Tap	Stocks	Dies	Taps	Sizes	Stock Die and Tap	Stocks	Dies	Taps
1/4	$1.77	$0.50	$1.00	$0.45	11/16	$3.43	$0.90	$1.90	$1.05
5/16	1.80	.50	1.00	.50	3/4	3.62	.90	2.00	1.20
3/8	2.03	.55	1.15	.55	13/16	4.19	1.10	2.25	1.40
7/16	2.26	.60	1.30	.60	7/8	4.56	1.10	2.50	1.60
1/2	2.62	.70	1.50	.70	15/16	5.08	1.25	2.75	1.80
9/16	2.88	.80	1.60	.80	1	5.45	1.25	3.00	2.00
5/8	3.14	.85	1.75	.90	....	.....	.....	.....	.....

ADJUSTABLE TAP WRENCHES

FOR MACHINISTS' TAPS

Drop Forgings. Jaws Best Tool Steel

Size No. 00. Length 5 inches, for taps 3/16 and smaller..... $1.25

Size No. 0. Length 7 inches, for taps 1/16 to 1/4 inch..... 1.50

Size No. 5. Length 10 1/2 inches, for taps 5/16 to 1/2 inch..... 2.00

Size No. 6. Length 15 inches, for taps 1/4 to 3/4 inch..... 2.50

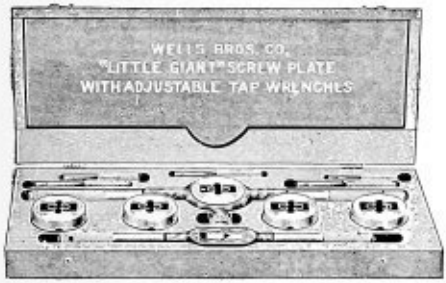
Size No. 7. Length 20 inches, for taps 3/8 to 1 inch..... $3.50

Size No. 7 1/2. Length 30 inches, for taps 3/8 to 1 1/4 inch..... 6.50

Size No. 8. Length 42 inches, for taps 3/4 to 1 1/2 inches..... 8.00

SCREW PLATES

LITTLE GIANT



No. 1

Stock 14½ in. long. Adjustable Tap Wrench No. 5.
Taper Taps, Dies, Collets 2 diam.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12].....$12.00

No. 2

Stock 23 in. long. Adjustable Tap Wrench No. 6.
Taper Taps, Dies, Collets 2¾ diam.
Cutting ¼[20], 3/8[16], ½[12], 5/8[11], ¾[10].....$13.50

No. 3

Stock 26 in. long. Adjustable Tap Wrench No. 7
Taper Taps, Dies, Collets 2¾ diam.
Cutting 5/8[11], ¾[10], 7/8[9], 1[8].....$15.00

No. 4

Stock 26 in. long. Adjustable Tap Wrench No. 7.
Taper Taps, Dies, Collets 2¾ diam.
Cutting ½[12], 5/8[11], ¾[10], 7/8[9], 1[8].....$17.50

No. 5

Stock 23 in. long. Adjustable Tap Wrench No. 6.
Taper Taps, Dies, Collets 2¾ diam.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 5/8[11], ¾[10].....$16.00

No. 5½

Stock 23 in. long. Adjustable Tap Wrench No. 6.
Taper Taps, Dies, Collets 2¾ diam.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 9/16[12], 5/8[11], ¾[10].$18.50

No. 6

Stock 26 in. long. Adjustable Tap Wrench No. 7.
Taper Taps, Dies, Collets, 2¾ in. diam.
Cutting 3/8[16], 7/16[14], ½[12], 5/8[11], ¾[10], 7/8[9], 1[8].....$22.00

No. 7

Stock 26 in. long. Two Adjustable Tap Wrenches Nos. 5 and 7.
Taper Taps, Dies, Collets 2¾ in. diam.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 5/8[11], ¾[10], 7/8[9], 1[8].....$25.50

No. 7½

Stock 26 in. long. Two Adjustable Tap Wrenches Nos. 5 and 7.
Taper Taps, Dies, Collets 2¾ in. diam.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 9/16[12], 5/8[11], ¾[10], 7/8[9], 1[8].....$28.00

No. 8

Two Stock 14½ in and 26 in. long. Adjustable Tap Wrench No. 6.
Taper, Taps, Dies.
Collets for four smaller sizes, 2 in. diam. For larger sizes, 2¾ in. diam.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 5/8[11], ¾[10].....$18.00

No. 9

Two Stocks 14½ in. and 29 in. long. Two Adjustable Tap Wrenches Nos. 5, 7.
Taper Taps, Dies.
Collets for four smallest sizes, 2 in. diam. For larger sizes, 2¾ in. diam.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 5/8[11], ¾[10], 7/8[9], 1[8].....$27.50

No. 20

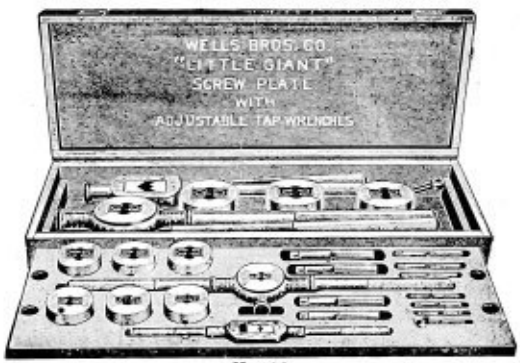
Stock 40 in. long. Adjustable Tap Wrench No. 7½.
Taper Taps, Dies, Collets 4 in. diam.
Cutting 5/8[11], ¾[10], 7/8[9], 1[8], 1⅛[7], 1¼[7].....$35.00

No. 25

Stock 52 in. long. Adjustable Tap Wrench No. 8
Taper Taps, Dies, Collets 4½ in. diam.
Cutting 7/8[9], 1[8], 1⅛[7], 1¼[7], 1⅜[6], 1½[6].....$45.00

No. 30

Stock 52 in. long. Adjustable Tap Wrench No. 8.
Taper Taps, Dies, Collets 4½ in. diam.
Cutting 1⅛[7], 1¼[7], 1⅜[6], 1½[6].....$37.50



No. 40

Two Stocks 23 in. and 40 in. long. Two Adjustable Tap Wrenches Nos. 6 and 7½.
Taper Taps, Dies.
Collets 2¾ in. diam. for first seven sizes, 4 in. diam. for larger.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 5/8[11], ¾[10], 7/8[9], 1[8], 1⅛[7], 1¼[7].....$40.00

No. 50

Two Stocks 26 in. and 52 in. long. Two Adjustable Tap Wrenches Nos. 6 and 18.
Taper Taps, Dies.
Collets 2¾ in diam. for first nine sizes, 4½ in. diam. for larger sizes.
Cutting ¼[20], 5/16[18], 3/8[16], 7/16[14], ½[12], 5/8[11], ¾[10], 7/8[9], 1[8], 1⅛[7], 1¼[7] 1⅜[6], 1½[6].....$60.00

"V" threads, 1/32 oversize, furnished unless otherwise ordered.

SCREW PLATES

LITTLE GIANT

List of Taps, Dies and Collets

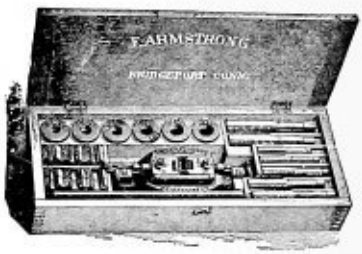
Diam. Inches	Regular Number of "V" Threads per Inch.	Price of Tap	Price of Die	Price of Collet Plates Nos. 1 to 9	Price of Collet Plates Nos. 20 to 50
3/32	24	$0.35	$1.00	$0.50	.....
1/4	20	.45	1.00	.50	.....
5/16	18	.50	1.00	.50	.....
3/8	16	.55	1.25	.50	.....
7/16	14	.60	1.25	.50	.....
1/2	12	.70	1.50	.50	.....
9/16	12	.80	1.50	.50	.....
5/8	11	.90	1.75	.50	$1.50
11/16	11	1.05	1.75	.50	1.50
3/4	10	1.20	2.00	.50	1.50
13/16	10	1.40	2.00	.50	1.50
7/8	9	1.60	2.75	.50	1.50
15/16	9	1.80	2.75	.50	1.50
1	8	2.00	2.75	.50	1.50
1 1/8	7	2.25	4.00	.....	1.50
1 1/4	7	2.60	4.00	.....	1.50
1 3/8	6	3.00	5.00	.....	1.50
1 1/2	6	3.50	5.00	.....	1.50

List of Stocks

Stock 7½ in. long for collets 1¼ diameter.....$0.70
" 13½ " " " " 1⅝ " 1.25
" 14½ " " " " 2 " 1.50
" 23 " " " " 2¾ " 2.00
" 26 " " " " 2¾ " 2.00
" 29 " " " " 2¾ " 2.00
" 40 " " " " 4 " 6.00
" 52 " " " " 4½ " 8.00

When ordering give number which you wish stocks for

ARMSTRONG'S ADJUSTABLE STOCK AND DIES, FOR THREADING BOLTS



No. 1 Stock Bolt Dies ¼ to ¾ inch.....$15.00
" 1 " 4 Pipe and 7 Bolt Dies 20.00
" 1 " 7 Bolt Dies 7 Tap ¼ to ¾ inch... 20.50
" 1 " 4 Pipe Dies 7 Bolt Dies 7 Taps.... 25.50

These sizes and threads of Bolt Dies will be furnished with this Stock unless otherwise ordered: ¼—20, 5/16—18, ⅜—16, 7/16—14, ½—12, ⅝—11, ¾—10. Intermediate sizes are special.

No. 2 Stock, 7 Bolt Dies ½–1¼.....$20.00
" 2 " 9 " " ¼–1..... 25.00
" 2 " 11 " " ¼–1¼..... 30.00
" 2 " 7 " " 7 Taps, ½–1¼..... 32.00
" 2 " 9 " " 9 " ¼–1..... 35.00
" 2 " 11 " " 11 " ¼–1¼..... 45.00
" 2 " 7 " " ½–1¼ 7 Taps, ½–1¼ 5 Pipe.....40.00

DIES

Machine or Solid Bolt

Sizes	Number of Threads	Size of Square	Thickness	Price	Sizes	Number of Threads	Size of Square	Thickness	Price
1/4	16, 18, *20	2½	½	$1.80	15/16	*9	2½	¾	$2.55
5/16	16, *18	2½	½	1.80	1	*8, 12	2½	1	2.70
3/8	14, *16, 18	2½	½	1.80	1 1/8	*7, 8	2½	1	3.00
7/16	12, *14, 16	2½	½	1.80	1 1/4	*7	2½	1	3.30
1/2	*12, 13, 14	2½	¾	1.80	1 3/8	*6	2½	1	3.60
9/16	*12, 14	2½	¾	1.90	1 1/2	*6	3	1	3.90
5/8	10, *11, 12	2½	¾	2.00	1 5/8	*5, 5½	3	1	4.20
11/16	*11, 12	2½	¾	2.10	1 3/4	*5	3	1¼	5.40
3/4	*10, 12	2½	¾	2.20	1 7/8	*4½, 5	3½	1½	6.50
13/16	*10	2½	¾	2.30	2	*4½, 5	3½	2	7.50
7/8	*9, 10, 12	2½	¾	2.40					

Will send above ½ oversize, with threads indicated by star (*), V form, unless otherwise ordered.

TAPS

MACHINISTS' HAND TAPS

Three Taps to set, Taper, Plug and Bottoming

Taper

Plug

Bottoming

Dia.	No. Threads to inch	Each	Per Set
1/16	.....	$0.45	$1.35
3/32	24	.45	1.35
1/8	16,18,20	.45	1.35
5/32	16,18,20	.50	1.50
3/16	14,16,18	.55	1.65
7/32	14, 16	.60	1.80
1/4	12,13,14	.70	2.10
9/32	12, 14	.80	2.40
5/16	10,11,12	.90	2.70
11/32	11, 12	1.05	3.15
3/8	10, 12	1.20	3.60
13/32	10	1.40	4.20
7/16	9, 10	1.60	4.80
15/32	9	1.80	5.40
1	8	2.00	6.00
1 1/8	7, 8	2.25	6.75
1 1/4	7	2.60	7.80
1 3/8	6	3.00	9.00
1 1/2	6	3.50	10.50
1 5/8	5, 5 1/2	4.20	12.60
1 3/4	5	5.00	15.00
1 7/8	4 1/2, 5	5.80	17.40
2	4 1/2	6.70	20.10

BIT BRACE TAPS

All Bit Brace Taps are sent even size, "V" Standard, unless otherwise ordered.

Diameter, inches	No. of Threads to inch	Each
3/16	24	$0.50
1/4	16, 18, 20	.50
5/16	16, 18	.55
3/8	14, 16	.60
7/16	12, 14	.70
1/2	12, 13	.80

STOVE BOLT TAPS

These Taps are made to correspond in sizes and threads to the American Screw Company's stove bolts. Other sizes and threads will be charged as special. Less than six Taps of a size will be charged at rate of single Taps.

Sizes	Each	Per dozen	No. of Threads	Sizes	Each	Per dozen	No. of Threads
5/32	$0.35	$4.00	28	1/4	$0.38	$4.40	18
3/16	.35	4.00	24	5/16	.38	4.40	18
7/32	.35	4.00	22	3/8	.45	5.30	16

MACHINE OR NUT TAPS

"V" Form of Threads or U. S. Standard

Sizes	Number of Threads to inch	Whole Length inches	Each	Sizes	Number of Threads to inch	Whole Length inches	Each
3/16	**24**	4 1/2	$0.60	1 3/4	**5**	17	$6.00
1/4	16, 18, **20**	5	.60	1 7/8	4 1/2, 5	17 3/4	6.80
5/16	16, **18**	5 3/4	.70	2	4 1/2, 5	18 1/2	7.70
3/8	14, **16**	6 1/2	.80	2 1/8	**4 1/2**	18 1/2	9.00
7/16	12, **14**, 16	7 1/4	.90	2 1/4	**4 1/2**	18 1/2	10.20
1/2	**12**, 13, 14	8	1.00	2 3/8	**4 1/2**	18 1/2	11.50
9/16	**12**, 14	8 3/4	1.15	2 1/2	**4**	19	12.50
5/8	10, **11**, 12	9 1/2	1.30	2 5/8	**4**	19	14.00
11/16	**11**, 12	10 1/4	1.45	2 3/4	**4**	19 1/2	15.00
3/4	**10**	10 1/4	1.60	2 7/8	**4**	19 1/2	16.50
13/16	**10**	11	1.80	3	3 1/2	21	18.00
7/8	**9**, 10	11 1/16	2.10	3 1/8	3 1/2	21	19.75
15/16	**9**	11 11/16	2.40	3 1/4	3 1/2	21	21.50
1	**8**	12	2.80	3 3/8	3 1/2	21	23.00
1 1/8	**7**, 8	12 5/8	3.20	3 1/2	3 1/4	21	25.00
1 1/4	**7**, 8	13 1/4	3.70	3 5/8	3 1/4	21	27.00
1 3/8	**6**	14	4.20	3 3/4	3	21	29.50
1 1/2	**6**	15 1/2	4.70	3 7/8	3	21	31.00
1 5/8	**5**, 5 1/2	16 1/4	5.30	4	3	21	33.50

We can furnish the above threads in "V" and United States Standard Shapes.

Unless advised to the contrary, we fill orders with "V" form and in threads as indicated in heavy type.

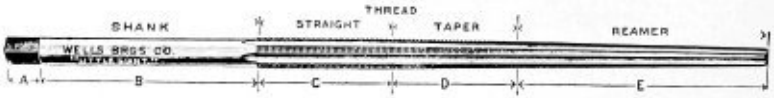
We also keep in stock 1/64 and 1/32 oversize, up to 3/4 inch, and 1/32 oversize, up to 1 1/2 inch.

In ordering, always state exact diameter and thread wanted.

MACHINE SCREW TAPS

Size of Screw Gauge	Standard No. of Threads	Threads also Furnished	Each	Per dozen
No. 1	..	56, 60, 64, 72	$0.35	$4.00
1 1/2	..	56	.35	4.00
2	56	48, 64	.35	4.00
3	48	40, 56	.35	4.00
4	36	32, 40, 42, 48	.35	4.00
5	36	32, 40	.35	4.00
6	32	30,36,38,40,48	.35	4.00
7	32	30,40	.35	4.00
8	32	30, 36, 40	.35	4.00
9	30	28, 32	.35	4.00
10	24	28, 30, 32, 36	.35	4.00
11	24	28, 30	.35	4.00
12	24	20, 32	.35	4.00
13	22	20, 24, 32	.38	4.40
14	20	18, 24	.38	4.40
15	20	18, 24	.38	4.40
16	18	16, 20	.38	4.40
18	18	16, 20	.38	4.40
20	16	18	.45	5.30
22	16	18	.45	5.30
24	16	14, 18	.45	5.30
26	16	14	.53	6.30
28	14	16	.53	6.30
30	14	16	.53	6.30

TAPS



STAY BOLT TAPS

Diameter inches	Each											
	16 in.	18 in.	21 in.	24 in.	27 in.	30 in.	33 in.	36 in.	39 in.	42 in.	48 in.	54 in.
¾, 13/16, ⅞	$5.60	$7.20	$8.00	$8.80	$10.90	$13.00	$14.00	$15.00	$16.50	$18.00	$19.00	$20.00
15/16, 1	6.60	8.50	9.35	10.20	12.25	14.25	15.40	16.50	18.00	19.75	21.00	22.25
1 1/16, 1 1/8	7.60	9.50	10.35	11.20	13.25	15.25	16.40	17.50	20.00	22.00	23.50	25.00
1 3/16, 1 1/4	9.00	10.50	12.00	12.75	14.75	16.50	18.00	19.50	22.00	24.00	25.50	27.00
1 5/16, 1 3/8	11.00	12.50	14.00	15.00	17.00	18.50	20.00	21.50	24.00	26.00	28.00	30.00
1 7/16, 1 1/2	13.00	14.50	16.00	17.00	19.00	20.00	22.00	23.50	26.00	28.00	30.00	32.00

Read This as it is Important

All orders for these taps should give exact diameter and number of threads per inch, also length of parts, A, B, C, D, and E.

Stay Bolt Taps with 10, 11, 12 and 13 Threads in either "V" or U. S. S. Threads furnished at regular prices. However, 12 is the regular number and Taps are *always* furnished with this number unless otherwise ordered.

PIPE TAPS AND REAMERS

Pipe Reamers	Pipe Taps					
Diameter, in.,	1/8	1/4	3/8	1/2	3/4	1
Threads per in.	27	18	18	14	14	11½
Each	$1.12	1.25	1.50	1.87	2.50	3.12
Diam., inches,	1 1/4	1½	2	2½	3	
Threads per in.	11½	11½	11½	8	8	
Each	$3.75	4.62	6.25	10.50	15.00	

Standard Taper is 1 inch to the foot.

Pipe Taps, 2½ inches and larger, have inserted teeth.

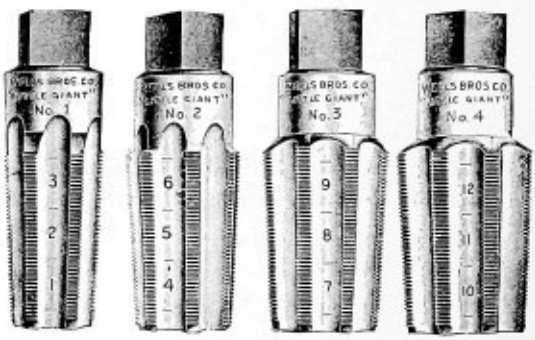
COMBINED PIPE TAP AND DRILL

For Tapping Gas and Water Pipes

Sizes	Length	Each	Sizes	Length	Each
1/4	3¾	$1.50	1¼	5	$4.80
3/8	4	1.75	1½	5½	5.80
1/2	4¼	2.20	2	5¾	7.60
3/4	4½	3.00	2½	6½	10.00
1	4¾	3.80			

Shanks for sizes ¼ to 1½ inches are 11/16 inch by ½ inch, and 1¾ inches long.

Shanks for sizes 2 and 2½ inches are 1 inch by ¾ inch, and 2 inches long.



MUD PLUG OR WASHOUT TAPS

For Washout Holes in Locomotives

No. 1. 1¾ to 2 1/16 ..... each, $6.00
" 2. 2 1/16 " 2 3/8 ..... " 7.50
" 3. 2 3/8 " 2 9/16 ..... " 9.00
" 4. 2 9/16 " 3 ..... " 10.50

These Taps will be furnished with "V" form thread, 12 to the inch unless otherwise ordered.

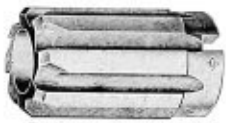
PATCH BOLT TAPS

12 "V" Threads per Inch

Sizes	Length Over All, in.	No. of Thr'ds	Each	Sizes	Length Over All, in.	No. of Thr'ds	Each
1/2	3	12	$0.70	13/16	3	12	$1.40
9/16	3	12	.80	7/8	3	12	1.60
5/8	3	12	.90	15/16	3	12	1.80
11/16	3	12	1.05	1	3	12	2.00
3/4	3	12	1.20	1 1/8	3	12	2.25
				1 1/4	3	12	2.60

REAMERS

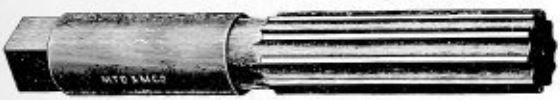
Fluted Shell Reamer



Rose Shell Reamer

BIT BRACE TAPER REAMERS

Size	Price Each	Length Over All, inches	Length Flute inches
1/8	$0.35	3 3/4	1 5/8
3/16	.35	3 7/8	1 3/4
1/4	.45	4	1 7/8
5/16	.50	4 1/8	2
3/8	.55	4 1/4	2 1/8
7/16	.60	4 3/8	2 1/4
1/2	.70	4 1/2	2 3/8
9/16	.80	4 5/8	2 1/2
5/8	.90	4 3/4	2 5/8
11/16	1.05	4 7/8	2 3/4
3/4	1.20	5	2 7/8
13/16	1.40	5 1/8	3
7/8	1.60	5 1/4	3 1/8
15/16	1.80	5 3/8	3 1/4
1	2.00	5 1/2	3 3/8
1 1/16	2.15	5 5/8	3 1/2
1 1/8	2.25	5 3/4	3 5/8
1 3/16	2.45	5 7/8	3 3/4
1 1/4	2.60	6	3 7/8
1 5/16	2.80	6 1/8	4
1 3/8	3.00	6 1/4	4 1/8
1 7/16	3.25	6 3/8	4 1/4
1 1/2	3.50	6 1/2	4 3/8



HAND REAMERS

Eccentric Flutes

Diameter	Each	Length inches	Length of Flute inches	Diameter	Each	Length inches	Length of Flute inches
1/8	$1.00	3	1 1/2	27/32	$2.95	9 3/8	4 11/16
5/32	1.10	3 1/4	1 5/8	7/8	3.10	9 11/16	4 27/32
3/16	1.20	3 1/2	1 3/4	29/32	3.25	10 3/32	5 3/64
7/32	1.30	3 3/4	1 7/8	15/16	3.40	10 1/4	5 1/8
1/4	1.40	4	2	31/32	3.55	10 9/16	5 11/32
9/32	1.45	4 1/4	2 1/8	1	3.70	10 7/8	5 7/16
5/16	1.50	4 1/2	2 1/4	1 1/32	3.85	11 1/16	5 17/32
11/32	1.55	4 3/4	2 3/8	1 1/16	4.00	11 1/4	5 5/8
3/8	1.60	5	2 1/2	1 3/32	4.15	11 7/16	5 23/32
13/32	1.70	5 1/4	2 5/8	1 1/8	4.30	11 5/8	5 13/16
7/16	1.75	5 1/2	2 3/4	1 5/32	4.45	11 13/16	5 29/32
15/32	1.85	5 3/4	2 7/8	1 3/16	4.60	12	6
1/2	1.90	6	3	1 7/32	4.75	12 1/8	6 1/16
17/32	1.95	6 1/4	3 1/8	1 1/4	4.90	12 1/4	6 1/8
9/16	2.00	6 1/2	3 1/4	1 9/32	5.05	12 11/32	6 11/64
19/32	2.10	6 3/4	3 3/8	1 5/16	5.20	12 7/16	6 7/32
5/8	2.20	7	3 1/2	1 11/32	5.40	12 17/32	6 17/64
21/32	2.30	7 11/32	3 43/64	1 3/8	5.60	12 5/8	6 5/16
11/16	2.40	7 11/16	3 27/32	1 13/32	5.80	12 23/32	6 23/64
23/32	2.50	8 1/8	4 1/16	1 7/16	6.00	12 13/16	6 13/32
3/4	2.60	8 3/8	4 3/16	1 15/32	6.20	12 29/32	6 29/64
25/32	2.70	8 23/32	4 23/64	1 1/2	6.40	13	6 1/2
13/16	2.80	9 1/16	4 17/32	.....	.....	.....	.....

SHELL REAMERS

Diameter, in.	Price, Each	Length, in.	Size Hole, in.
1/4	$1.10	1 1/2	1/8
5/16	1.10	1 1/2	1/8
3/8	1.20	1 3/4	3/16
7/16	1.30	1 3/4	3/16
1/2	1.40	2	1/4
9/16	1.50	2	1/4
5/8	1.60	2 1/4	3/8
11/16	1.60	2 1/4	3/8
3/4	1.60	2 1/2	1/2
13/16	1.60	2 1/2	1/2
7/8	1.70	2 1/2	1/2
15/16	1.70	2 1/2	1/2
1	1.80	2 3/4	5/8
1 1/16	1.80	2 3/4	5/8
1 1/8	1.90	2 3/4	5/8
1 3/16	2.00	2 3/4	5/8
1 1/4	2.20	2 3/4	5/8
1 5/16	2.40	3	3/4
1 3/8	2.60	3	3/4
1 7/16	2.80	3	3/4
1 1/2	3.00	3	3/4
1 9/16	3.20	3	3/4
1 5/8	3.50	3	3/4
1 11/16	3.80	3 1/2	1
1 3/4	4.10	3 1/2	1
1 13/16	4.40	3 1/2	1
1 7/8	4.70	3 1/2	1
1 15/16	5.00	3 1/2	1
2	5.20	3 1/2	1
2 1/16	5.40	3 3/4	1 1/4
2 1/8	5.60	3 3/4	1 1/4
2 3/16	5.80	3 3/4	1 1/4
2 1/4	6.00	3 3/4	1 1/4
2 5/16	6.20	3 3/4	1 1/4
2 3/8	6.40	3 3/4	1 1/4
2 7/16	6.60	3 3/4	1 1/4
2 1/2	6.80	3 3/4	1 1/4
2 9/16	7.00	4	1 1/2
2 5/8	7.30	4	1 1/2
2 11/16	7.60	4	1 1/2
2 3/4	8.00	4	1 1/2
2 13/16	8.40	4	1 1/2
2 7/8	8.80	4	1 1/2
2 15/16	9.20	4	1 1/2
3	9.60	4	1 1/2
3 1/16	9.60	4 1/2	1 3/4
3 1/8	10.20	4 1/2	1 3/4
3 3/16	10.60	4 1/2	1 3/4
3 1/4	11.00	4 1/2	1 3/4
3 5/16	11.50	4 1/2	1 3/4
3 3/8	12.00	4 1/2	1 3/4
3 7/16	12.50	4 1/2	1 3/4
3 1/2	13.00	4 1/2	1 3/4
3 9/16	13.50	5	2
3 5/8	14.00	5	2
3 11/16	14.50	5	2
3 3/4	15.00	5	2
3 13/16	15.50	5	2
3 7/8	16.00	5	2
3 15/16	17.00	5	2
4	18.00	5	2

ARBORS FOR SHELL REAMERS

With Straight Shank

Size	Each	Fitting Sizes	Length Over All Inches	Size	Each	Fitting Sizes	Length Over All Inches
No. 2	$1.40	3/8 to 7/16	7	No. 9	$3.00	2 1/16 to 2 1/2	13
" 3	1.60	1/2 " 5/8	8	" 10	3.40	2 5/16 " 3	14
" 4	1.80	11/16 " 3/4	9	" 11	5.00	3 1/16 " 3 1/2	15
" 5	2.00	13/16 " 1	9 1/2	" 12	7.00	3 7/16 " 4	16
" 6	2.20	1 1/16 " 1 1/4	10	" 13	9.00	4 1/16 " 4 1/2	17
" 7	2.40	1 5/16 " 1 5/8	11	" 14	12.00	4 5/16 " 5	18
" 8	2.70	1 11/16 " 2	12				

With Straight Shank

With Taper Shank

Arbors for Shell Reamers with Taper Shank

Size No.	Each	Fitting Sizes, in.	Lgth. Over All, in.	Shank Taper	Size No.	Each	Fitting Sizes, in.	Length Over All. in.	Shank Taper
2	$2.40	3/8 to 7/16	7 1/16	No. 1	8	$4.10	1 11/16 to 2	13 7/16	No. 4
3	2.40	1/2 to 5/8	8 1/2		9	4.25	2 1/16 to 2 1/2	14 1/2	
4	2.70	11/16 to 3/4	9 5/16	No. 2	10	5.00	2 5/16 to 3	15 3/16	
5	2.70	13/16 to 1	10 1/4		11	6.00	3 1/16 to 3 1/2	16 5/8	No. 5
6	3.30	1 1/16 to 1 1/4	11 3/16	No. 3	12	7.75	3 5/16 to 4	17 3/4	
7	3.60	1 5/16 to 1 5/8	12 3/8		13	9.50	4 1/16 to 4 1/2	19 3/4	
					14	12.75	4 5/16 to 5	20	

TAPER BRIDGE REAMERS

With Square Shanks

Diameter, in.			Each	Length of Flute, in.	Length of Tap'd end in.	Length Over All, in.
1/2	1/2	1/2	$2.75	5 1/4	3	8 1/8
9/16	9/16	9/16	2.80	5 1/4	3	8 1/8
5/8	5/8	5/8	2.90	6 1/4	3	9 1/8
11/16	11/16	5/8	3.00	6 1/4	3	9 1/8
3/4	3/4	11/16	3.10	7 5/8	3	10 1/2
13/16	13/16	1/2	3.30	7 5/8	3	10 1/2
7/8	7/8	9/16	3.50	7 5/8	3	10 5/8
15/16	15/16	5/8	3.70	7 5/8	3	10 5/8
1	1	11/16	3.90	7 5/8	3	10 5/8
1 1/16	1 1/16	11/16	4.00	7 5/8	3	10 5/8
1 1/8	1 1/8	11/16	4.20	7 5/8	3	10 5/8
1 1/16	1 1/16	11/16	4.40	7 5/8	3	10 5/8
1 1/4	1 1/4	7/8	4.60	7 5/8	3	10 5/8

Shanks of these Reamers are 3/4 in. diameter up to 1 1/16 in. inclusive, and from 7/8 in. to 1 1/4 in. are 1 1/16 in. diameter.

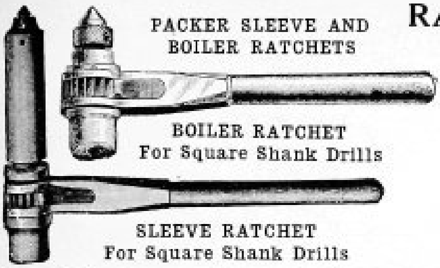
With Taper Shanks

Diameter, in.			Each	Length of Flute, in.	Length Over All, in.	Shank Taper
1/2	1/2	1/2	$2.75	5 1/4	9	
9/16	9/16	9/16	2.80	5 1/4	9	No. 2
5/8	5/8	5/8	2.90	6 1/4	10	
11/16	11/16	5/8	3.00	6 1/4	11	
3/4	3/4	11/16	3.10	7 5/8	12	
13/16	13/16	1/2	3.30	7 5/8	12	
7/8	7/8	9/16	3.50	7 5/8	12	
15/16	15/16	5/8	3.70	7 5/8	12	No. 3
1	1	11/16	3.90	7 5/8	12	
1 1/16	1 1/16	11/16	4.00	7 5/8	12	
1 1/8	1 1/8	11/16	4.20	7 5/8	12	
1 1/16	1 1/16	11/16	4.40	7 5/8	12	
1 1/4	1 1/4	7/8	4.60	7 5/8	12	

PARADOX ADJUSTABLE HAND REAMERS

Diam. in.	Each	Length of Flute, in.	Lgth. Over All, in.	Diam. in.	Each	Length of Flute, in.	Lgth. Over All, in.	Diam. in.	Each	Length of Flute, in.	Lgth. Over All, in.	Diam. in.	Each	Length of Flute. in.	Lgth. Over All, in.
1/2	$5.20	2 3/4	6 1/2	1 1/2	8.00	3 3/4	8 3/8	1 7/8	$11.80	4 1/4	10 3/4	2 1/2	16.65	5	12 7/8
9/16	5.20	2 3/4	6 5/8	1 9/16	8.20	3 1/2	8 3/4	1 15/16	12.00	4 3/4	10 7/8	2 9/16	16.90	5	13
5/8	5.20	2 3/4	6 3/4	1 5/8	8.40	3 1/2	8 7/8	2	12.20	4 3/4	11	2 5/8	17.20	5	13 1/8
11/16	5.35	2 3/4	6 7/8	1 11/16	8.60	3 1/2	9	2 1/16	12.45	4 3/4	11 1/8	2 11/16	17.45	5 3/4	13 1/4
3/4	5.50	2 3/4	7	1 3/4	8.80	3 1/2	9 1/8	2 1/8	12.65	4 1/2	11 1/4	2 3/4	17.70	5 3/4	13 3/8
13/16	5.65	2 3/4	7 1/8	1 13/16	9.00	3 1/2	9 1/4	2 3/16	12.90	4 1/2	11 3/8	2 13/16	17.95	5 3/4	13 1/2
7/8	5.80	2 3/4	7 1/4	1 7/8	9.20	3 1/2	9 3/8	2 1/4	13.25	4 1/2	11 1/2	2 7/8	18.25	5 3/4	13 5/8
15/16	5.95	2 3/4	7 1/4	1 15/16	9.40	3 3/4	9 1/2	2 5/16	13.50	4 1/2	11 1/2	2 15/16	18.50	5 3/4	13 3/4
1	6.10	3	7 3/8	2	9.60	3 3/4	9 1/2	2 3/8	13.75	4 1/2	11 5/8	3	18.75	5 3/4	13 3/4
1/16	6.25	3	7 1/2	2 1/16	9.80	3 3/4	9 5/8	2 7/16	14.00	4 1/2	11 3/4	3 1/16	19.00	5 3/4	13 7/8
1 1/8	6.40	3	7 5/8	2 1/8	10.00	3 3/4	9 3/4	2 1/2	14.25	4 3/4	11 7/8	3 1/8	19.30	5 3/4	14
1 3/16	6.55	3	7 3/4	2 3/16	10.20	4	9 7/8	2 9/16	14.55	4 3/4	12	3 3/16	19.55	5 3/4	14 1/8
1 1/4	6.70	3 1/8	7 7/8	2 1/4	10.40	4	10	2 5/8	14.80	4 3/4	12 1/8	3 1/4	19.85	5 3/4	14 1/4
1 5/16	6.85	3 1/8	8	2 5/16	10.60	4	10 1/8	2 11/16	15.05	4 3/4	12 1/4	3 5/16	20.10	5 3/4	14 3/8
1 3/8	7.00	3 1/8	8 1/8	2 3/8	10.80	4	10 1/4	2 3/4	15.30	4 3/4	12 3/8	3 3/8	20.35	5 3/4	14 1/2
1 7/16	7.20	3 1/8	8 1/4	2 7/16	11.00	4	10 1/4	2 13/16	15.60	4 3/4	12 1/2	3 7/16	20.60	5 3/4	14 5/8
1 1/2	7.40	3 1/4	8 3/4	2 1/2	11.20	4	10 3/8	2 7/8	15.85	5	12 5/8	3 1/2	20.90	5 3/4	14 3/4
1 9/16	7.60	3 1/4	8 3/8	2 9/16	11.40	4 1/4	10 1/2	2 15/16	16.15	5	12 5/8	3	21.15	5 3/4	14 7/8
1 5/8	7.80	3 1/4	8 1/2	2 5/8	11.60	4 1/4	10 5/8	2 1/8	16.40	5	12 3/4				

RATCHET DRILLS

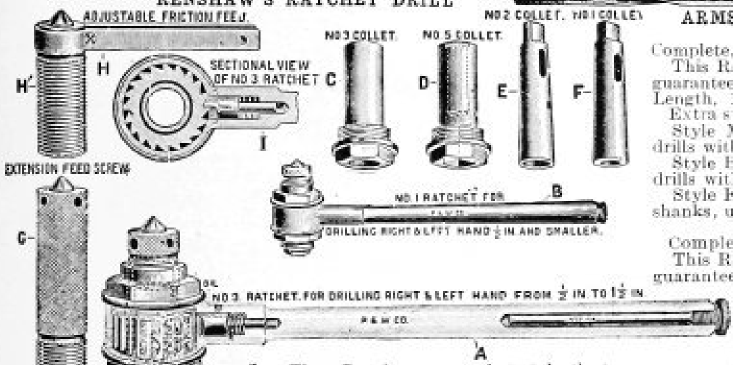


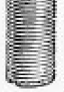
No.	Length of Handle, Inches	Sleeve Ratchets	Boiler Ratchets
1	10	$10.50	$9.00
2	12	13.50	10.50
3	16	16.00	......
4	17	19.00	......
5	20	23.00	......

FOR TAPER SHANK DRILLS

No.	Length of Handle, Inches	Size of Taper Socket	Each
2 A	12	M. T. No. 2	$16.00
3 A	16	M. T. No. 3	20.00
4 A	17	M. T. No. 4	25.00

RENSHAW'S RATCHET DRILL





These Ratchets are made to take the taper shank, and also the ordinary square shank drills. By transferring the collet and feed-screw, as arranged for right-hand drilling, to opposite ends of the spindle, the ratchet may be used for left-hand drilling

	No. 1	No. 3.
Length of handles over all	9½ in.	18 in.
" from top of spindle to bottom of feed collet	3 in.	5 in.
Length of feed	1½ in.	2¾ in.

No. 1 has one collet for drills with square shank, and one collet for drills fitting No. 1 Morse's Standard Taper Socket. Price..........$11.00
Less for either collet, if not wanted.......... 1.60

No. 3 has one collet, No. 5, for drills with square shank of ½ to 1½ inches diameter, and collets Nos. 1, 2 and 3 for Morse's Standard Taper Shanks. No. 3 and No. 5 collets are held in the spindle by screw-thread. No. 1 and No. 2 collets are tapered externally to fit No. 3 socket.
Less for Collets Nos. 1 and 2, each..........$1.10
Less for Collets Nos. 3 and 5, each.......... 1.75
Price, with four collets.......... 15.00

The No. 3 ratchet, for use of boiler-makers, for whose use it is especially adapted, is provided with an extended feed-screw, having a knurled shank 3½ inches long, by which the ratchet may be held by hand in starting the drill, and fed by hand also. When this extended screw is substituted for th regular one the price is the same; if it is taken as an extra attachment, it is furnished at..........$3.50
Adjustable friction feed attachment..........extra, 4.00

KEYSTONE REVERSIBLE RATCHET—Combination No. 200

Consists of Morse Taper Ratchet for Twist Drills, Sleeve for Square Shank Drills, and Short Boiler Socket for Square Shank Drills. Sockets interchangeable.

No. 51.	Combination complete with	10-in.	handle	$7.75
" 52.	" "	14 "	"	9.00
" 53.	" "	16 "	"	10.00
" 54.	" "	18 "	"	11.25
" 55.	" "	22 "	"	11.25
" 56.	" "	24 "	"	11.75
" 57.	" "	28 "	"	12.25

The Bore of Socket for 10-in. Ratchet is No. 2, Taper taking Drills up to 29-32 of an inch.
The Bore of Socket for 14 and 16-inch Ratchet is No. 3 Taper taking Drills up to 1¼ inches.
The Bore of Socket for 18 to 28 inch Ratchet is No. 4 Taper taking Drills up to 2 inches.
The Socket for 10-inch Ratchet takes No. 1 Morse Taper Sleeve.
The Socket for 14 and 16-inch Ratchet takes No. 2 Morse Taper Sleeve.
The Socket for 18 and 28-inch Ratchet takes No. 3 Morse Taper Sleeve.

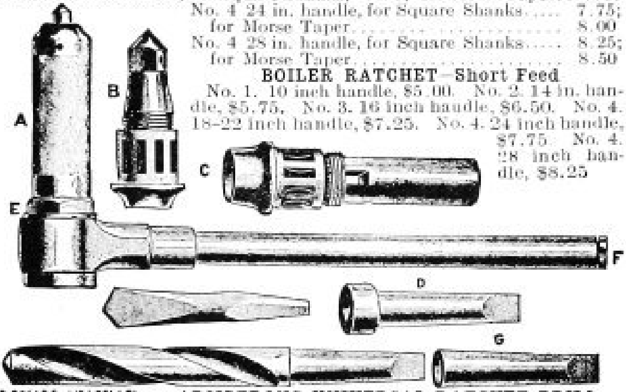
KEYSTONE REVERSIBLE A, represents ratchet adjusted, with socket for square shanks. B, boiler makers' socket. C, Morse taper socket. D, square shank sleeve. E, cap for securing socket in holder. F, knob for reversing movement. No drift required for discharging Morse taper drill or sleeve.

SLEEVE RATCHETS

No. 1. 10 in. handle, for Square Shanks, $5.00; for Morse Taper..$5.25
No. 2. 14 in. handle, for Square Shanks, 5.75; for Morse Taper.. 6.00
No. 3. 16 in. handle, for Square Shanks, 6.50; for Morse Taper.. 6.75
No. 4. 18-22 in. handle, for Square Shanks, 7.25; for Morse Taper.. 7.50
No. 4 24 in. handle, for Square Shanks..... 7.75; for Morse Taper.......... 8.00
No. 4 28 in. handle, for Square Shanks..... 8.25; for Morse Taper.......... 8.50

BOILER RATCHET—Short Feed

No. 1. 10 inch handle, $5.00. No. 2. 14 in. handle, $5.75. No. 3. 16 inch handle, $6.50. No. 4. 18-22 inch handle, $7.25. No. 4. 24 inch handle, $7.75. No. 4. 28 inch handle, $8.25



ARMSTRONG UNIVERSAL RATCHET DRILL

RATCHET No. 4

Complete, with one Spindle only..........$12.00

This Ratchet is designed for ordinary work, and is guaranteed for drilling holes up to one inch in dia. Length, 14 inches. Weight, 4¼ lbs.

Extra spindles for No. 4 ratchet, each..........$2.40

Style M Spindle, taking No. 1 square taper shank drills with shank ⅜-inch square on small end.

Style B Spindle, taking No. 2 square taper shank drills with shank ½-inch square on small end.

Style K Spindle, taking drills with No. 2 Morse taper shanks, up to ⅞ in. diameter.

RATCHET No. 6

Complete, with one Spindle only..........$18.00

This Ratchet is designed for very heavy work, being guaranteed to drill holes up to two inches in diameter. Length, 18 inches. Weight, 10½ lbs.

Extra Spindles for No. 6 ratchet, each $3.60

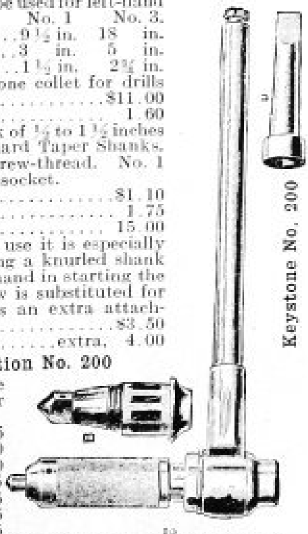
Style C Spindle, taking No. 1 square taper shank drills with shank ⅜-inch square on small end.

Style F Spindle, taking No. 2 square taper shank drills with shank ½ inch square on small end.

Style N Spindle, taking drills with No. 3 Morse taper shanks, up to 1¼ inch diameter.

Style S Spindle, taking drills with No. 4 Morse taper shanks, up to 2 inch diameter.

NOTE—Regular Morse Taper Reducing Sleeves can be used in K. N. and Spindles.



Two Inches of Motion at end of Handle, in Any Direction, will Drive the Drill

When ordering be careful to specify style spindle wanted. Unless otherwise specified we will ship No. 4 Ratchet equip'd with M Spindle and No. 6 equipped with C Spindle.

DRILLS

HAND DRILL, No. 5

These Drills are provided with Chucks having three jaws, resting in solid sockets. There are no springs to get out of place or out of order. The chucks are nickeled and the handles Cocobola. They hold drills from 0 to $\frac{3}{16}$ inch.

Has same chuck as No. 1, but is double geared, and is provided with a wide rim gear, to be grasped between thumb and fingers when the drill is used for delicate work. In this manner it can be run without liability of breaking points. Length over all 11½ inches; weight, 20 ounces.

Including 8 fluted points.....each, $1.50
Points only.....per set, .48

BREAST DRILL, No. 11

We have quite recently changed the chuck on this drill, substituting a pattern far superior to the former one used. It also accommodates a larger range of shanks, viz.: from 0 to $\frac{3}{8}$ inch. In other respects than the chuck, and that the crank cannot be extended, the drill conforms to No. 10.

Each.....$3.00

BREAST DRILL, No. 12

Ball Bearing

Changeable gear from even to speeded about 3 to 1.

Has cut gears, adjustable cranks, level attachment to show when being held true, alligator jaws, holding both round and square shanks. The handles are Cocobola, and the chuck nickeled. Everything about the tool will be found durable and nicely finished.

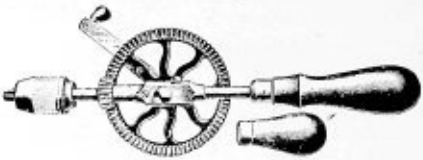
Price.....each, $2.50

IMPROVED RATCHET BRACES

Ball Bearing

Sweep, inches	8	10	12
Each	$1.35	1.50	1.65

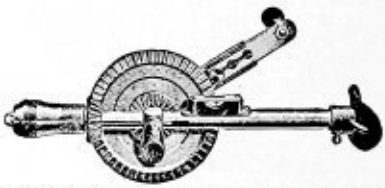
HAND DRILL, No. 7



Extreme length, 12½ inches. Diameter of drive gear, 4 inches. The chuck holds from 0 to $\frac{13}{64}$ inches. The metal parts, with exception of gear, are polished. The gear is japanned, and is provided with a take-up in case of wear. The handles are hard wood, stained in imitation of Cocobola.

Price.....each, $1.75

BREAST DRILL, No. 10



With ball bearings, nickel plated stock and chuck, Cocobola handles, extension crank, new alligator jaws, which hold both round and square shanks, and a patent level attachment to enable the operator to see when the tool is held true. The gears are cut and are changeable from even to speeded 3 to 1.

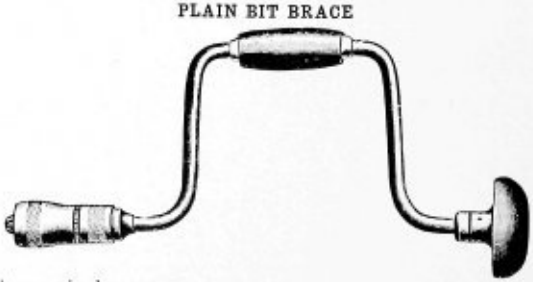
Price.....each, $3.00

BREAST DRILL, No. 13

This is the largest size Breast Drill, the drive wheel being 6 inches in diameter, giving a speed of 4½ to 1. It has cut gears, steel stock, rosewood handles, steel jawed chuck. It is heavily nickel plated.

Price.....each, $4.00

PLAIN BIT BRACE



Sweep, inches	8	10	12
Each	$0.75	.90	1.00

DRILLS

Straight Shank Drills

Diameter	Per dozen	Each	Length
1/16	$1.00	$0.09	2 1/2
5/64	1.10	.10	2 5/8
3/32	1.20	.11	2 3/4
7/64	1.30	.12	2 7/8
1/8	1.45	.13	3
9/64	1.60	.15	3 1/8
5/32	1.80	.16	3 1/4
11/64	2.00	.18	3 3/8
3/16	2.20	.20	3 1/2
13/64	2.40	.21	3 5/8
7/32	2.65	.23	3 3/4
15/64	2.90	.26	3 7/8
1/4	3.15	.28	4
17/64	3.40	.30	4 1/8
9/32	3.65	.32	4 1/4
19/64	3.90	.35	4 3/8
5/16	4.20	.37	4 1/2
21/64	4.50	.40	4 5/8
11/32	4.80	.42	4 3/4
23/64	5.10	.45	4 7/8
3/8	5.40	.48	5
25/64	5.70	.50	5 1/8
13/32	6.00	.53	5 1/4
27/64	6.40	.55	5 3/8
7/16	6.80	.59	5 1/2
29/64	7.20	.63	5 5/8
15/32	7.50	.65	5 3/4
31/64	7.75	.67	5 7/8
1/2	8.00	.70	6

Larger sizes same list as Taper Shank, see page 486.

Bit Stock Drills, for Metal or Wood

Diameter	Per dozen	Each	Whole Length	Length from Shank to Point
1/16	$1.50	$0.14	3 3/8	1 1/2
5/64	1.65	.16	3 3/4	1 7/8
3/32	2.10	.20	4 1/8	2 3/16
7/64	2.60	.24	4 1/2	2 5/8
1/8	3.10	.29	4 3/4	2 7/8
9/64	3.60	.33	5 1/4	3 1/8
5/32	4.10	.38	5 3/16	4 1/16
11/64	4.70	.43	5 3/8	4 1/4
3/16	5.40	.48	5 1/2	4 3/8
13/64	6.30	.54	5 7/8	4 3/4
7/32	7.20	.62	5 7/8	4 7/8
15/64	8.00	.68	5 7/8	4 7/8
1/4	8.80	.75	6 1/4	5
17/64	9.60	.82	6 5/8	5 1/4
9/32	10.30	.87	6 3/4	5 1/2
19/64	11.00	.92	7 1/2	5 5/8
5/16	.....	1.20	7 1/2	5 5/8
21/64	.....	1.35	7 1/2	5 5/8
11/32	.....	1.50	7 1/2	5 5/8
23/64	.....	1.65	7 1/2	5 5/8
3/8	.....	1.80	7 1/2	5 5/8
25/64	.....	1.95	7 1/2	5 5/8
13/32	.....	2.15	7 1/2	5 5/8
27/64	.....	2.35	7 1/2	5 5/8

Taper Square Shank Drills Fitting Ratchets

With Shanks 5/8 inch by 3/8 inch and 1 1/2 inches long, and Shanks 3/4 inch by 1/2 inch and 1 3/4 inches long.

Diameter	Each	Length Over all
1/8	$0.90	4 1/2
9/64	.95	4 1/2
5/32	.95	4 1/2
11/64	1.00	5
3/16	1.00	5
13/64	1.05	5
7/32	1.10	5
15/64	1.15	5
1/4	1.20	6
17/64	1.25	6 1/4
9/32	1.25	6 1/4
19/64	1.30	6 1/4
5/16	1.30	6 1/2
21/64	1.35	6 1/2
11/32	1.35	6 1/2
23/64	1.40	6 1/2
3/8	1.40	6 1/2
25/64	1.45	6 1/2
13/32	1.45	6 1/2
27/64	1.50	6 1/2
7/16	1.55	6 1/2
29/64	1.65	6 1/2
15/32	1.75	7
31/64	1.90	7
1/2	2.05	7 1/2
33/64	2.20	7 1/2
17/32	2.30	8
35/64	2.40	8
9/16	2.55	8 1/2
37/64	2.70	8 1/2
19/32	2.85	8 1/2
39/64	3.00	8 1/2
5/8	3.10	9
41/64	3.25	9
21/32	3.35	9
43/64	3.50	9
11/16	3.65	9
45/64	3.75	9
23/32	3.90	9
47/64	4.05	9
3/4	4.20	9
49/64	4.35	9
25/32	4.50	9
51/64	4.65	9
13/16	4.80	9
53/64	5.10	9
27/32	5.40	9
55/64	5.75	9
7/8	6.10	9
57/64	6.50	9
29/32	6.90	9
59/64	7.30	9
15/16	7.75	9
61/64		
31/32		
63/64		
1		
1 1/32		
1 1/16		
1 3/32		
1 1/8		
1 5/32		
1 3/16		
1 7/32		
1 1/4		
1 9/32		
1 5/16		
1 11/32		
1 3/8		
1 13/32		
1 7/16		
1 15/32		
1 1/2		
1 9/16		
1 5/8		
1 11/16		
1 3/4		
1 13/16		
1 7/8		
1 15/16		
2		

DRILLS

PATENT INCREASE TWIST DRILLS, WITH TAPER SHANKS

	Diameter	Each	Length
Takes No. 1 Sleeve	1/4	$0.60	6 1/8
	9/32	.65	6 1/4
	5/16	.70	6 3/8
	11/32	.75	6 1/2
	3/8	.80	6 3/4
	13/32	.85	7
	7/16	.90	7 1/4
	15/32	.95	7 1/2
	1/2	1.00	7 3/4
	17/32	1.10	8
	9/16	1.20	8 1/4
	19/32	1.30	8 1/2
	5/8	1.40	8 3/4
Takes No. 2 Sleeve	21/32	1.50	9
	11/16	1.60	9 1/4
	23/32	1.70	9 1/2
	3/4	1.85	9 3/4
	25/32	2.00	9 7/8
	13/16	2.15	10
	27/32	2.30	10 1/4
	7/8	2.45	10 1/2
	29/32	2.60	10 5/8
	15/16	2.75	10 3/4
	31/32	2.90	10 7/8
Takes No. 3 Sleeve	1	3.00	11
	1 1/32	3.20	11 1/8
	1 1/16	3.40	11 1/4
	1 3/32	3.60	11 1/2
	1 1/8	3.80	11 3/4
	1 5/32	4.00	11 7/8
	1 3/16	4.20	12
	1 7/32	4.40	12 1/8
	1 1/4	4.50	12 1/2
Take No. 4 Sleeve	1 9/32	4.65	14 1/8
	1 5/16	4.80	14 1/4
	1 11/32	5.00	14 3/8
	1 3/8	5.20	14 1/2

	Diameter	Each	Length
Takes No. 4 Sleeve	1 13/32	$5.40	14 5/8
	1 7/16	5.60	14 3/4
	1 15/32	5.80	14 7/8
	1 1/2	6.00	15
	1 17/32	6.30	15 1/8
	1 9/16	6.60	15 1/4
	1 19/32	6.90	15 3/8
	1 5/8	7.20	15 1/2
	1 21/32	7.50	15 5/8
	1 11/16	7.80	15 3/4
	1 23/32	8.10	15 7/8
	1 3/4	8.40	16
	1 25/32	8.60	16 1/8
	1 13/16	8.80	16 1/4
	1 27/32	9.00	16 3/8
	1 7/8	9.20	16 1/2
	1 29/32	9.35	16 1/2
	1 15/16	9.50	16 1/2
	1 31/32	9.65	16 1/2
	2	9.80	16 1/2
Takes No. 5 Sleeve	2 1/32	10.20	16 1/2
	2 1/16	10.60	17
	2 1/8	11.20	17
	2 3/16	12.00	17
	2 1/4	12.80	17 1/2
	2 5/16	13.60	17 1/2
	2 3/8	14.40	18
	2 7/16	15.00	18 1/2
	2 1/2	15.60	19
	2 9/16	16.20	19 1/4
	2 5/8	16.80	19 1/2
	2 11/16	17.60	20
	2 3/4	19.00	20 1/4
	2 13/16	20.00	20 1/2
	2 7/8	21.00	21
	2 15/16	23.00	21
	3	25.00	22

STRAIGHT SHANK DRILLS, WIRE GAUGE

Wire Gauge No.	Price per dozen	Each	Decimal Diameter inches	Length Over All, in.	Wire Gauge No.	Price per dozen	Each	Decimal Diameter inches	Length Over All, in.	Wire Gauge No.	Price per dozen	Each	Decimal Diameter inches	Length Over All, in.
1	$2.35	$0.22	.2280	4	21	$1.75	$0.17	.1590	3 3/16	41	$1.10	$0.10	.0960	2 5/16
2	2.35	.22	.2210	3 15/16	22	1.75	.17	.1570	3 1/8	42	1.10	.10	.0935	2 5/16
3	2.35	.22	.2130	3 13/16	23	1.75	.17	.1540	3 1/16	43	1.10	.10	.0890	2 1/4
4	2.35	.22	.2090	3 7/8	24	1.75	.17	.1520	3 1/16	44	1.10	.10	.0860	2 3/16
5	2.35	.22	.2055	3 13/16	25	1.75	.17	.1495	3	45	1.10	.10	.0820	2 3/16
6	2.25	.21	.2040	3 13/16	26	1.55	.15	.1470	2 15/16	46	.95	.09	.0810	2 1/8
7	2.25	.21	.2010	3 3/4	27	1.55	.15	.1440	2 15/16	47	.95	.09	.0785	2 1/16
8	2.25	.21	.1990	3 11/16	28	1.55	.15	.1405	2 7/8	48	.95	.09	.0760	2 1/16
9	2.25	.21	.1960	3 11/16	29	1.55	.15	.1360	2 13/16	49	.95	.09	.0730	2
10	2.25	.21	.1935	3 5/8	30	1.55	.15	.1285	2 13/16	50	.95	.09	.0700	1 15/16
11	2.10	.20	.1910	3 9/16	31	1.40	.14	.1200	2 3/4	51	.95	.09	.0670	1 15/16
12	2.10	.20	.1890	3 9/16	32	1.40	.14	.1160	2 11/16	52	.95	.09	.0635	1 7/8
13	2.10	.20	.1850	3 1/2	33	1.40	.14	.1130	2 11/16	53	.95	.09	.0595	1 13/16
14	2.10	.20	.1820	3 7/16	34	1.40	.14	.1110	2 5/8	54	.95	.09	.0550	1 13/16
15	2.10	.20	.1800	3 7/16	35	1.40	.14	.1100	2 9/16	55	.95	.09	.0520	1 3/4
16	1.95	.19	.1770	3 3/8	36	1.25	.12	.1065	2 9/16	56	.95	.09	.0465	1 11/16
17	1.95	.19	.1730	3 5/16	37	1.25	.12	.1040	2 1/2	57	.95	.09	.0430	1 11/16
18	1.95	.19	.1695	3 5/16	38	1.25	.12	.1015	2 7/16	58	.95	.09	.0420	1 5/8
19	1.95	.19	.1660	3 1/4	39	1.25	.12	.0995	2 7/16	59	.95	.09	.0410	1 9/16
20	1.95	.19	.1610	3 3/16	40	1.25	.12	.0980	2 3/8	60	.95	.09	.0400	1 9/16

For Sleeves, see page 488.

DRILLS

DRILLS FOR BLACKSMITHS' DRILL PRESSES

Have shanks 2¼ inches long, and ½ inch diameter.

Diameter inches	Each	Length inches
1/8	$0.45	4 7/8
5/32	.45	4 7/8
3/16	.50	5 5/8
7/32	.55	5 5/8
1/4	.60	6
9/32	.65	6
5/16	.70	6
11/32	.73	6
3/8	.75	6
13/32	.78	6
7/16	.80	6
15/32	.83	6
1/2	.85	6
17/32	.88	6
9/16	.90	6
19/32	1.00	6
5/8	1.05	6
21/32	1.10	6
11/16	1.15	6
23/32	1.20	6
3/4	1.25	6
25/32	1.30	6
13/16	1.35	6
27/32	1.40	6
7/8	1.45	6
29/32	1.50	6
15/16	1.60	6
31/32	1.70	6
1	1.80	6
1 1/32	1.90	6
1 1/16	2.00	6
1 3/32	2.10	6
1 1/8	2.20	6
1 5/32	2.25	6
1 3/16	2.30	6
1 7/32	2.35	6
1 1/4	2.40	6
1 9/32	2.50	6
1 5/16	2.60	6
1 11/32	2.70	6
1 3/8	2.80	6
1 13/32	2.90	6
1 7/16	3.00	6
1 15/32	3.10	6
1 1/2	3.20	6

Have shanks .648 inch exact diameter, commonly called 5/8 in.

Diameter inches	Each	Length inches
1/8	$0.55	4 7/8
5/32	.58	4 7/8
3/16	.60	5 5/8
7/32	.65	5 5/8
1/4	.70	6
9/32	.73	6
5/16	.75	6
11/32	.80	6
3/8	.85	6
13/32	.88	6
7/16	.90	6
15/32	.93	6
1/2	.95	6
17/32	.98	6
9/16	1.00	6
19/32	1.03	6
5/8	1.05	6
21/32	1.10	6
11/16	1.15	6
23/32	1.20	6
3/4	1.25	6
25/32	1.30	6
13/16	1.35	6
27/32	1.40	6
7/8	1.45	6
29/32	1.55	6
15/16	1.60	6
31/32	1.70	6
1	1.80	6
1 1/32	1.90	6
1 1/16	2.00	6
1 3/32	2.10	6
1 1/8	2.20	6
1 5/32	2.25	6
1 3/16	2.30	6
1 7/32	2.35	6
1 1/4	2.40	6
1 9/32	2.50	6
1 5/16	2.60	6
1 11/32	2.70	6
1 3/8	2.80	6
1 13/32	2.90	6
1 7/16	3.00	6
1 15/32	3.10	6
1 1/2	3.20	6
1 9/16	3.40	6
1 5/8	3.60	6
1 11/16	3.80	6
1 3/4	4.05	6
1 13/16	4.30	6
1 7/8	4.50	6
1 15/16	4.75	6
2	5.00	6

MACHINE BITS

½-inch Round Shanks, 2¼ inches long

MANUFACTURERS STANDARD MACHINE BIT LIST

Size 16ths	6-in. Twist	8-in. Twist	10-in. Twist	12-in. Twist	14-in. Twist	16-in. Twist
4	7.80	9.36	10.92	12.48	.....	.....
5	8.40	10.08	11.76	13.44	.....	.....
6	9.00	10.80	12.60	14.40	16.20	18.00
7	9.90	11.88	13.86	15.84	17.82	19.80
8	10.80	12.96	15.12	17.28	19.44	21.60
9	12.00	14.40	16.80	19.20	21.60	24.00
10	13.20	15.84	18.48	21.12	23.76	26.40
11	14.40	17.28	20.16	23.04	25.92	28.80
12	15.60	18.72	21.84	24.96	28.08	31.20
13	16.80	20.16	23.52	26.88	30.24	33.60
14	18.00	21.60	25.20	28.80	32.40	36.00
15	19.20	23.04	26.88	30.72	34.56	38.40
16	20.40	24.48	28.56	32.64	36.72	40.80
17	21.60	25.92	30.24	34.56	38.88	43.20
18	22.80	27.36	31.92	36.48	41.04	45.60
19	24.00	28.80	33.60	38.40	43.20	48.00
20	25.20	30.24	35.28	40.32	45.36	50.40
21	26.40	31.68	36.96	42.24	47.52	52.80
22	27.60	33.12	38.64	44.16	49.68	55.20
23	28.80	34.56	40.32	46.08	51.84	57.60
24	30.00	36.00	42.00	48.00	54.00	60.00
25	31.50	37.80	44.10	50.40	56.70	63.00
26	33.00	39.60	46.20	52.80	59.40	66.00
27	34.50	41.40	48.30	55.20	62.10	69.00
28	36.00	43.20	50.40	57.60	64.80	72.00
29	37.50	45.00	52.50	60.00	67.50	75.00
30	39.00	46.80	54.60	62.40	70.20	78.00
31	40.50	48.60	56.70	64.80	72.90	81.00
32	42.00	50.40	58.80	67.20	75.60	84.00

In Ordering, always Give Diameter and Length of Twist and Shank.

WONDER DRILLING ATTACHMENT

With Universal Chuck

Will hold 1/16 to ½ inch round shank and bit-stock drills.

Each.....$3.00

STEEL SOCKETS FOR TAPER SHANK DRILLS

Rough Taper Socket

No.	Each	Holds Tools	Length Over All	Diameter of Shank
1	$1.20	1/4 to 9/16 in. inc.	7½ in.	1 1/8 in.
2	1.80	12/32 " 22/32 "	8 "	1¼ "
3	2.50	13/16 " 1¼ "	10 "	1½ "
4	4.00	1 9/32 " 2 "	12½ "	2 "
5	7.50	2 1/16 " 3 "	16 "	2¾ "
6	14.00	3 1/16 " 4 "	19 "	3¾ "

Finished Taper Socket

No. 1 with shank fitted to No. 2 or 3 socket....$2.00
No. 2 " " " " 3 socket..... 2.50
No. 2 " " " " 4 " 3.20
No. 3 " " " " 4 " 3.20
No. 4 " " " " 5 " 4.80
No. 5 " " " " 6 " 12.00

STEEL SLEEVES FOR TAPER SHANK DRILLS

No. 1 fitted to No. 2 or 3 socket.....$1.80
No. 2 " " 3 socket..... 2.40
No. 2 " " 4 " 3.00
No. 3 " " 4 " 3.00
No. 4 " " 5 " 4.40

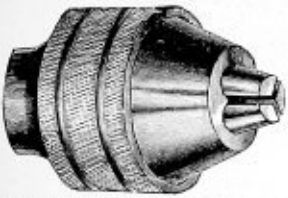
Drill and Countersink Combined

Saves time; saves money; perfect center holes

Size	Per Dozen	Diam. of Body	Diam. of Drill
A	$1.50	.203	1/16
B	1.50	.301	1/8
C	1.50	.301	3/32
D	1.50	.234	No. 49
E	1.50	.234	No. 45
F	3.00	.436	5/32
G	3.00	.436	3/16

CHUCKS

THE ALMOND DRILL CHUCK



This Chuck will center and hold drills with a firm grip, and is one of the best chucks in the market.

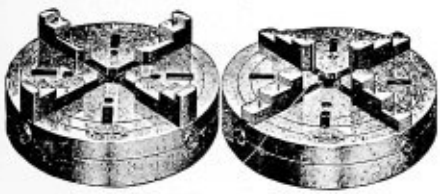
No. 1, holding 0 to 3/16 ..... $5.50
No. 2, holding 0 to 5/16 ..... 5.50
No. 3, holding 0 to 1/2 ..... 9.00

Extra Jaws, Set of 3

No. 1 ..... $1.50
No. 2 ..... 1.50
No. 3 ..... 2.55

UNIVERSAL LATHE CHUCKS

Three and Four Jawed, Nos. 11 and 12



No. 11. Outside Jaw **No. 12. Inside Jaw**

Cut represents Universal Lathe Chuck, in all sizes from 3 to 42 inches, inclusive.

Cut represents Universal Lathe Chuck, with Reverse Jaw. This Chuck is used for holding rings, rods, pipe, drills, etc. It is an excellent Chuck for brass finishing.

We can furnish with three or four jaws as desired.

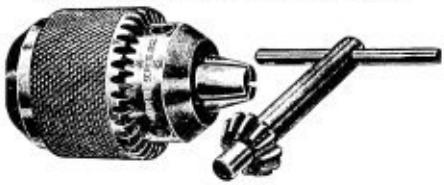
Dia. Chuck with Either Style Jaw	3 Jaws, Each	4 Jaws, Each
3-inch	$18.00	$26.00
4 "	22.00	30.00
5 "	25.00	32.00
6 "	26.00	42.00
9 "	34.00	56.00
12 "	44.00	64.00
15 "	52.00	75.00
18 "	62.00	95.00
21 "	80.00	120.00
24 "	100.00	160.00
26 "	130.00	200.00
30 "	170.00	285.00
36 "	230.00	325.00
42 "	270.00	.....

DAVIDSON AUTOMATIC DRILL CHUCK

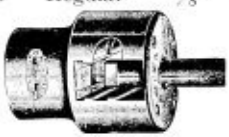
Drills can be changed without stopping Drill Press.

0 7/16 in. ..... each $10.00
1/8-1/2 " ..... " 10.50
1/4-5/8 " ..... " 12.50
3/8-11/16 " ..... " 13.00
7/16-3/4 " ..... " 13.00

THE JACOBS IMPROVED DRILL CHUCK



No.		Capacity		
1	Regular	0 to 1/4	in	each $5.50
1A	Flat Back	0 " 1/4	"	5.50
2	Regular	0 " 3/4	"	5.50
2A	Flat Back	0 " 3/8	"	5.50
3	Regular	0 " 17/32	"	9.00
3A	Flat Back	0 " 17/32	"	9.00
4	Regular	1/16 " 3/4	"	18.00
5	Regular	3/8 " 1	"	25.00



THE UNION DRILL CHUCK

With Patent Transverse Slot

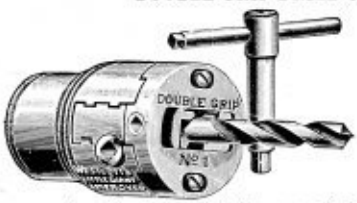
Nos.	000	00	00	101	102	103	104
Dia. in.	1 1/4	1 5/8	2 1/4	2 3/4	3 1/2	5	6
Holding inches.	0 to 1/4	0 to 3/8	0 to 1/2	0 to 3/4	0 to 1	0 to 1 1/2	0 to 2
Each	$7.00	7.50	8.00	9.00	10.00	18.00	20.00
Screws	1.00	1.00	1.00	1.00	1.10	2.50	3.00
Jaws	2.00	2.00	2.25	2.50	2.75	5.00	6.25
Keys	.50	.50	.50	.50	.75	1.00	1.00

THE INDEPENDENT 4-JAW CHUCKS. REVERSIBLE JAWS

Size	Size of Pole	Size of Face-Plate Recess	Each
4 1/2	1	4 3/8	$14.00
6	1 1/4	5 11/16	18.00
8	1 7/8	7 1/4	22.00
9	1 7/8	8 3/4	24.00
10	2	9 1/2	26.00
12	2 3/8	11 1/2	30.00
14	3	13 1/4	34.90
15	3	14 1/2	35.00
16	3	15 1/2	38.00
18	4	17 1/2	44.00
20	4	19 1/2	50.00
21	4	20 1/2	55.00
22	4 3/4	11	57.00
24	4 3/4	11	65.00
26	4 3/4	12	75.00

The Above Cut Shows the 8, 9, and 10 Inch Sizes

WESTCOTT'S PATENT NEW LITTLE GIANT IMPROVED DOUBLE GRIP DRILL CHUCK



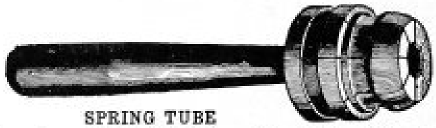
When ordering duplicate parts for Drill Chuck, state whether chuck is stamped with a * or not, and if so, whether it is stamped REFITTED. Also mention date of MANUFACTURE (not date of patent) stamped on end chuck (number of month and year), and full name of chuck stamped on side of same *i. e.*, whether Little Giant Improved, Little Giant Double Grip, or Oneida.

No.	Approx. Diam. in.	Holding Drills, inches	Each	Screws	Jaws per set.
00	1 1/16	0 to 1/4	$7.00	$1.00	$2.00
0	2 1/2	0 to 1/2	8.00	1.00	2.25
1	3	0 to 3/4	9.00	1.00	2.50
2	3 1/2	0 to 1	10.00	1.10	2.75
2 1/2	4	0 to 1, extra strong	11.00	1.50	3.50
3	6	0 to 1 1/2	18.00	2.50	5.00
4	6 1/2	0 to 2	20.00	3.00	6.25

TUBE EXPANDERS

ROLLER

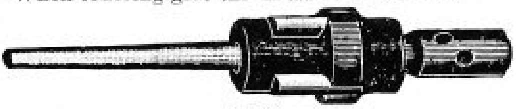
Size of Tube, Outside Diameter.....inches	1	1¼	1½	1¾	1⅞	2	2¼	2½	2¾
Price ....each	$10.00	10.00	10.00	10.00	10.00	10.00	12.00	14.00	16.00
Size of Tube, Outside Diameter.....inches	3	3¼	3½	3¾	4	4¼	4½	5	6
Price ....each	$18.00	20.00	23.00	25.00	30.00	35.00	40.00	50.00	60.00



SPRING TUBE

Size of Tube, Outside Diam..inch	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½
Price ....each	$8.00	8.00	9.00	11.00	12.00	13.00	15.00	18.00	22.00	26.00	30.00	33.00	37.00
Extra Pins....	$1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	4.00	4.50

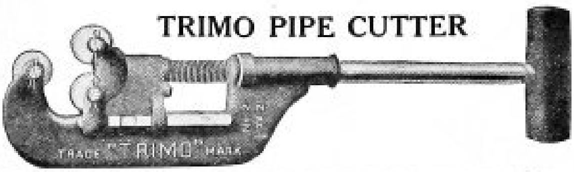
When ordering give thickness of tube sheet.



BOSS

Diam ...ins.	1	1⅛	1¼	1⅜	1½	1⅝	1¾
Each.......	$11.00	11.00	11.00	11.00	11.00	11.00	11.00
Diam ...ins.	1⅞	2	2⅛	2¼	2⅜	2½	2⅝
Each.......	$12.50	13.00	15.00	15.50	16.50	17.00	18.00
Diam ...ins.	2¾	3	3¼	3½	3¾	4	....
Each.......	$19.00	20.00	22.00	24.00	26.00	28.00	....

TRIMO PIPE CUTTER

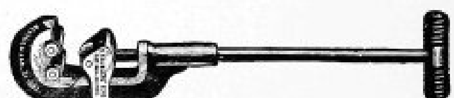


Sizes....	No. 1	No. 2	No. 3
Cuts Pipe	¼ to 1¼	½ to 2	1¼ to 3
Each....	$4.50	$6.00	$10.00
Extra Nuts....each	$0.35	$0.35	$0.40
Extra Wheels.... "	.30	.30	.40
Extra Rolls.... "	.30	.30	.40
Extra Pins with Cotter Pins, per doz.	1.00	1.00	1.00
Extra Anti-Friction Washers "	.60	.60	.60
Extra Fork Block Carrier...each	.10	.10	.10
Extra Block.... "	1.25	1.25	1.75
Extra Frame.... "	2.00	2.25	2.50
Extra Handle Screw.... "	1.00	1.25	2.00
Extra Handle.... "	.35	.35	.35

PIPE CUTTERS

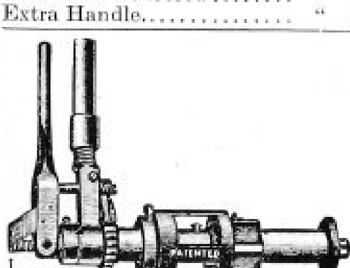
BARNES THREE-WHEEL PIPE CUTTER

No.	Cuts inches	Each	Extra Parts	
			Wheels, each	Pins, each
1	⅛ to 1	$4.50	$0.25	$0.10
2	½ " 2	6.00	.30	.10
3	1½ " 3	10.00	.40	.12
4	2½ " 4	20.00	.50	.15
5	4 " 6	30.00	.75	.20
6	6 " 8	40.00	1.00	.25
7	9 " 12	50.00	1.25	.25



SAUNDER'S WHEEL PIPE CUTTER

No.	Cuts inches	Each	Extra Parts		
			Wheels each	Block and Wheel, each	Rollers Each
1	⅛ to 1	$3.00	$0.25	$1.25	$0.25
2	1 " 2	4.50	.35	1.75	.35
3	2 " 3	11.00	.60	3.25	.50



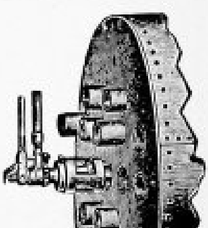
IDEAL SELF-FEED TUBE CUTTER

(Wiedeke Patent)

This Tube Cutter is the only one on the market to-day that has solved the problem of cutting off steel tubes without cracking them.

New tubes are cut off the same distance from the boiler head no matter if they project out ⅛ inch or 4 inches, (see illustration); they are cut with a bevel ready for beading, and rolled at the same time.

For cutting out old tubes on the inside of boiler heads, simply set the guards back, as shown in illustration, which can be done in less than half a minute.



Diameter.....inches	2	2¼	2½	2¾	3	3¼	3½	3¾	4	4¼	4½	5	5½	6
List Price. Complete	$14.00	14.00	14.00	16.00	20.00	20.00	22.00	22.00	22.00	30.00	30.00	32.00	32.00	32.00

McKENZIE'S CHAIN CLAMP

Fig. 3, Plank Hook

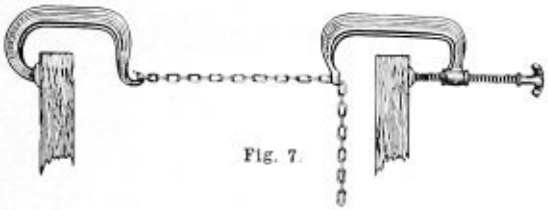


Fig. 7.

Fig. 4, Devil's Pull

Fig. 2, Keel Hook

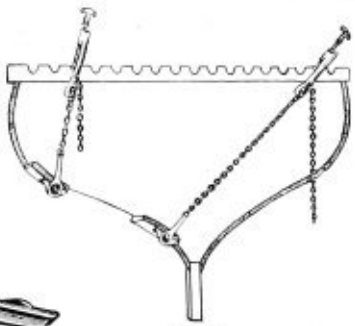


Fig. 6

Fig. 5, Planking Clip

Fig. 1

As illustrated, it will be seen that the length of this clamp is limited only by the length of the chain. It is made of the best malleable iron and warranted not to break with fair usage. It is useful in nearly all the wood-working industries, but more especially in building boats.

Fig. 1 represents a cross-section of a boat, showing the chain clamp in use both on an upper section and a lower section of planking.

Fig. 2 is an enlarged view of the "keel hook," shown in use on the lower section of planking, Fig. 1.

Fig. 3 is the "plank hook," with long bearing so it will not injure the edge of the plank. Shown in use on upper and lower section, Fig. 1.

Fig. 4 is a "devil's pull," for the purpose of pulling the after-end of a plank hard up against the stern board of a square stern boat. (See Fig. 6.)

Fig. 5 is a planking clip, and will be furnished if desired. They are to protect the edge of planks where the foot of the screw rests, and are used in place of the common chip of wood.

Fig. 7 may be called a slotted clamp. It is simply an ordinary boat clamp with a slot in the foot of it to receive a link of the chain. (See Fig. 7 clamping two posts.)

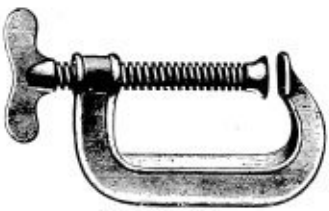
These clamps are made in two sizes, the larger for planks $\frac{7}{8}$ in. and upwards and the smaller size for $\frac{7}{8}$ in. and under. The strongest work they are suitable for is $\frac{7}{8}$ in. cedar plank, 5 to 6 in. wide. The larger size can be used on heavy or light work. Give a few drops of oil at least once a month, especially the button on the foot of the screw.

A set includes a screw, a chain, a plank hook, and a keel hook. Standard length of chains is $3\frac{1}{2}$ ft. for the small size and 4 ft. for larger size. If requested will send longer chains at 12 cents per foot extra.

Chain Clamps, large size	each,	$2.50
" " small size	"	1.50
Slotted " 9 in	"	1.00
Devil's Pulls	"	.75
Planking Clips, large size	"	.20
" " small "	"	.15
Extra length on chain, per ft	"	.12

SCREW CLAMPS

MALLEABLE IRON, SQUARE THREAD, RIBBED FRAMES

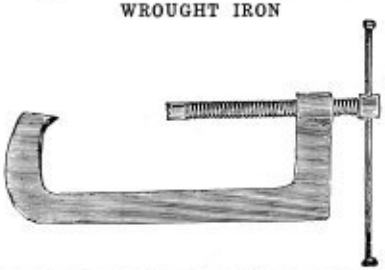


STANDARD

Opening Inches Wide	Per dozen
2	$2.00
2½	2.60
3	3.00
4	4.20
5	5.00
6	6.50
7	7.80
8	9.00
10	11.00
12	13.50

BOAT CLAMP SCREWS

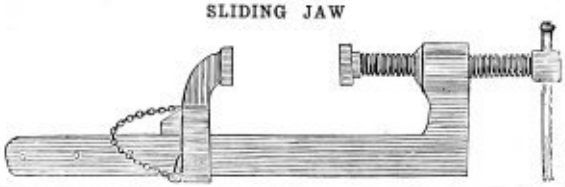
WROUGHT IRON



No.	Size of Frame inches	Diam. of Screw inches	Space in Clear inches	Each
10	2½x⅝	1½	18x5	$7.00
20	2¼x⅝	1½	16x4	5.75
30	2 x½	1¼	14x4	5.00
40	1¾x½	1¼	12x3½	4.50
50	1½x⅜	1⅛	10x3½	3.75
60	1¼x⅜	1⅛	8x3	3.00
70	1⅛x⅜	1	6x3	2.50

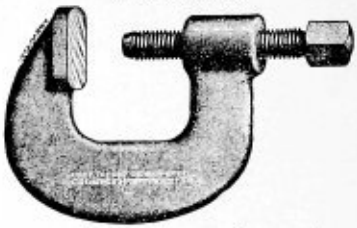
SHIP CARPENTERS' CLAMP SCREW

SLIDING JAW



No.	Size of Frame inches	Space in Clear inches	Each
1	3 x ¾	30	$14.25
2	3½x ⅞	36	17.75
3	4 x 1	36	20.00

BILLINGS' DROP-FORGED STEEL C CLAMP

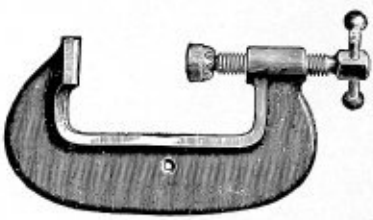


No.	1	2	3	4	5
Opens	1¼	2¼	3¼	4½	6½
Weight	.5 oz.	2 lbs.	5¼ lbs.	7½ lbs.	11½lbs.
Each	$0.75	$1.75	$2.50	$3.25	$4.00
Extra Screws..	.10	.15	.20	.30	.40

EXTRA HEAVY STEEL MACHINISTS' CLAMP

WILL STAND THE SEVEREST TEST

Extra heavy, with button on end of screw, hung on a ball so as to accommodate itself to irregularities without bending the screw. The foot of the clamp is planed.



No.	Opening to inches	Each
1	2	$1.75
2	3	2.00
3	4	2.25
4	5	2.50
5	6	2.75
6	8	3.25
7	10	3.75
8	12	4.25

HEAVY STEEL DOGS

WITH STEEL SCREWS, LATHE MADE AND HARDENED

This Dog has a very heavy boss, so that if the thread wears, it can be tapped out and a larger screw substituted.

No.	Inch	Each	No.	Inch	Each
1	⅜	$0.40	12	2	$1.20
2	½	.50	13	2¼	1.35
3	⅝	.60	14	2½	1.45
4	¾	.60	15	3	1.60
5	⅞	.70	16	3½	1.80
6	1	.70	17	4	2.10
7	1⅛	.80	18	4½	2.75
8	1¼	.80	19	5	3.25
9	1⅜	.95	20	5½	4.00
10	1½	.95	21	6	5.00
11	1¾	1.10	..	....	.....

STEEL DOG WRENCHES

Fitting Screw heads ⅜ to ¾ inch square. Will answer for both dogs and tool post.

Price each.....$0.75

BOILERMAKERS' STEEL SCREW PUNCH

No.	Will Punch Hole, inch	In Iron Thickness	Punch from Edge of Sheet	Weight Each lbs.	Each	Extra Punch and Die, pair
A	5/16	1/4	1 1/2	15	$20.00	$3.50
B	1/2	1/4	1 1/2	17	24.00	3.50
C	1/2	5/16	1 1/2	27	30.00	4.00
D	3/4	1/2	2 1/4	40	40.00	4.00
E	3/4	3/4	3	60	60.00	5.00
G	3/4	3/4	4	110	80.00	5.00

One Punch and Die with each machine.

FORGED STEEL SCREW PUNCH WITH RATCHET ATTACHMENT

No. 1 No. 3 No. 2 No. 4

The Ratchet Wrench, Fig. No. 3, is the latest and most economical tool for boilermakers' use. The handle is made proper size to fit inside 2½-inch pipe for extension of handle.

Fig. No. 2 shows Ratchet Head Screw. Fig. No. 1 Bar Head Screw. Fig. No. 4 Drill Socket to be used with Ratchet Wrench for drilling.

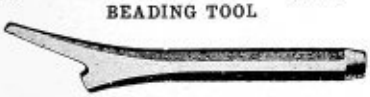
The Ratchet Wrench fits all sizes and kinds of screw punches made by us.

No. 1 punches ½-in. holes in 5/16-in. iron, 1½ in. from edge; weighs 20 lbs.....each, $16.00
No. 2 punches ¾-in. hole in 5/8-in. iron, 2½ in. from edge; weighs 48 lbs.....each, 25.00
No. 3 punches ¾-in. hole in ¾-in. iron, 3¼ in. from edge; weighs 70 lbs.....each, 32.00
No. 4 punches ¾-in. hole in ¾-in. iron, 4 in. from edge; weighs 100 lbs.....each, 40.00

One punch and die furnished with each machine. When ordering specify size of hole to be punched.

Extra Punches and Dies, No. 1.....per set, $2.00
" " " " " 2..... " 2.50
" " " " " 3..... " 2.80
" " " " " 4..... " 2.80
Ratchet Wrench.....each, 15.00
Drill Socket..... " 4.00

BEADING TOOL



Each.....$0.75

MARVEL PUNCH No. 10

Three-quarter front view

Has row of four punches in front, sizes 1/8, 5/16, ¼ and 5/16 inches, one punch being used at a time. All the punches may be left in place at all times if desired. Punches are simply dropped in place, and the steel block with thumb screw can be rapidly shifted over any punch desired, and punch tightened by turning thumb screw. The slide case is hardened steel. The movable block is hardened tool steel. The die is made of one piece, ⅞ inch wide, top face of die is 1½ inches from bottom of throat and 1¾ inches from top of throat, and is also extended forward so as to be able to punch web and flange of channels, eye beams, angles, etc.

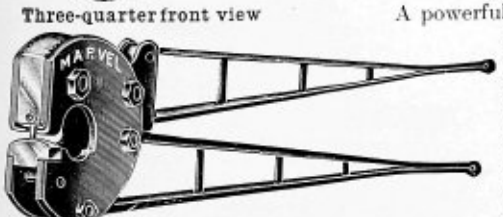
Lever is used swinging either way.

Capacity 5/16 hole in ¼ inch stock.

Throat, 4 inches. Weight, 90 lbs.

Complete with 4 punches, die and lever.....$30.00

THE MARVEL PORTABLE PUNCH No. 20
Made Entirely of Steel



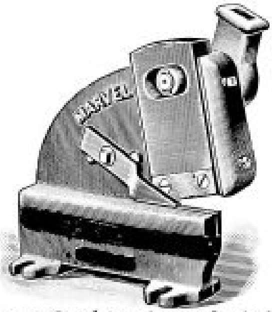
A powerful, well made tool. Easily carried in one hand. It punches sheets, bars, angles, circles, etc. A splendid tool for punching a number of holes around the edges of sheets. Will punch a hole ⅜-inch from inside corner of angle iron to center of punch. If desired to use stationary on a bench, it can be clamped in any common bench vise, the vise jaws clamping the frame between the two lower nuts, the two nuts acting as a perfect brace. Capacity, ¼-inch hole in ¼-inch stock. Depth of throat, 2 inches. Weight, 16 pounds. Length over all, 38 inches. Including one punch and die...$14.50

When not otherwise specified, ¼-inch punch and die is sent with each No. 20 punch.

Extra punches and dies, all sizes, from ⅛ inch to ½ inch, always on hand.

BAR AND ROUND IRON SHEARS

MARVEL SPLITTING SHEAR Nos. 1 AND 2



This machine is well made and very strong. The upper shear bearing is on an angle, and thus lessens the stain on the machine. The stripper, or hold down is so placed that a line on material can be easily followed. It shears swinging lever either way.

Note.—All No. 2 Shears are fitted with an attachment fixed to the end of the eccentric by which the throw of the eccentric can be changed from a long to a short throw for heavy work, or from a short throw to a long throw for light work, by the simple movement of a small steel pin in the attachment. This is a very simple and valuable attachment.

No. 1 will shear sheets $\frac{1}{8}$ inch thick, or less, any length or width.

No. 2 will shear sheets $\frac{1}{4}$ inch thick, or less, any length or width.

No. 1, 55 lbs., 4 in., blade, $14.00 No. 2, 200 lbs., 6 in., blade, $32.00

Lever with each machine.

BADGER

No. A1

A1 will shear $\frac{3}{8}$x3 inches flat bars only; weight 75 lbs., ... $13.00

A1$\frac{1}{2}$ will shear $\frac{3}{8}$x4 inches flat bars; weight 90 lbs... $16.00

Will cut $\frac{3}{4}$ inch round bars.

Style A3 — Badger Angle

A2 will cut $\frac{1}{2}$x2$\frac{1}{4}$ inches flat bars; weight 150 lbs., $19.50 A2$\frac{1}{2}$ will cut $\frac{1}{2}$x2$\frac{1}{2}$ inches flat bars; weight 165 lbs., $25.50. Will cut $\frac{7}{8}$ inch round bars.

With these shears the operator stands before his work, the lever working towards instead of away from him.

Light iron can be cut with one hand and adjusted with the other. It is the handiest shear made, and requires but one man to operate it;

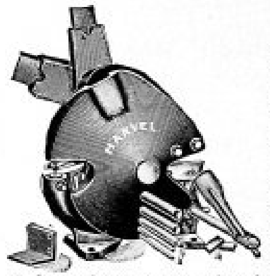
These machines can also be supplied with shears for cutting round as well as flatiron. Made in above sizes.

Style A10. Will cut $\frac{5}{8}$x5 in. steel bar; will cut 1$\frac{1}{4}$ in. round; weight 700 lbs., $68.00

Style A3. Cuts 1$\frac{1}{4}$x$\frac{5}{16}$ angle iron; weight 165 lbs 32.50

MARVEL COMBINED SHEAR AND PUNCH

Made of Malleable Iron with Double Lever. Blades, Punches and Dies Made of Best Tool Steel
All Parts Interchangeable

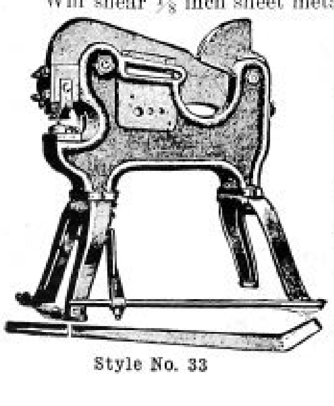


Equipped with double or compound eccentrics, one through the other, and one attached to each lever socket. The inside lever is short, for light, quick work, and has a pin that locks both sockets, and at the same time the two eccentrics together, thus working as a single eccentric. When thus locked the outside or long lever may also be inserted if more leverage is desired. For heavy work the small lever is turned half around in the socket, which unlocks sockets and eccentrics, and immediately by bringing forward long lever, the power is tremendously increased, and in this manner the operator can take a long or short swing with the long lever, with a pumping motion if desired, the short lever being brought forward each time the long lever is raised, which gives the long lever a new bite in the cut or punch, without moving the work. This feature is indeed a marvel.

It cuts $\frac{1}{2}$x2 in. flat and cuts free and true on lightest stock.
" " $\frac{1}{4}$, $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$ round, with shear for each size, insuring true round cut.
" " Angle iron in two cuts up to $\frac{1}{4}$x2x2 inch.
It punches $\frac{3}{8}$ inch hole in $\frac{3}{8}$ inch stock.
" " $\frac{1}{2}$ " " " $\frac{1}{4}$ " "

Throat 2$\frac{5}{8}$ inches. Flat shear blades 3$\frac{3}{4}$ inches long. Complete with 2 steel levers, 3 punches, 3 dies and gauge for flat and round shearing, weight 155 lbs.. . . . . $41.00
As above, and fitted with heavy iron legs, weight 210 lbs., $45.00

Will shear $\frac{1}{8}$ inch sheet metal any width or length.



Style No. 33

Will shear $\frac{1}{2}$ inch round iron.

Weight 120 lbs. Price $22.00

This represents our now combined rod cutter and splitting shears.

Gauges are provided for cutting sheet metal and round iron.

STYLE No. 33

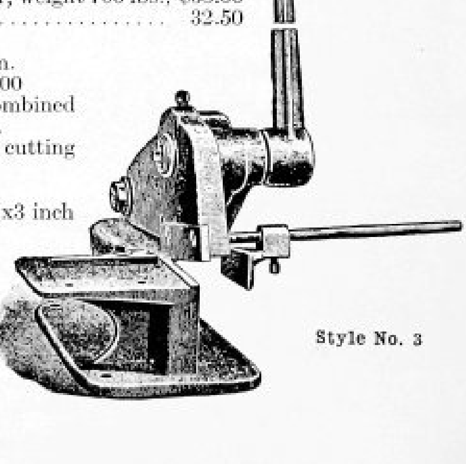
Will shear $\frac{1}{2}$x2$\frac{1}{2}$ inch or $\frac{3}{8}$x3 inch flat bars.

Will shear 1 inch round iron.

Will punch $\frac{3}{8}$ inch hole in $\frac{3}{8}$ inch iron.

Will punch to the center of 6 inches.

Weight 310 lbs. $37.00



Style No. 3

STARRETT'S TOOLS

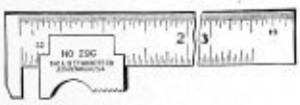
SPRING-TEMPERED RULES

No. 300

Thickness: .018 in. or No. 18 gauge.

Approximate widths:	½ in.	⅝ in.	¾ in.	⅞ in.	¾ in.	⅞ in.
Lengths	1 "	2 "	3 "	4 "	6 "	9 "
Prices	$0.15	.25	.35	.45	.65	1.00
Approximate widths:	1 in.	1⅛ in.	1¼ in.	1⅓ in.	1¼ in.	
Lengths	12 "	18 "	24 "	36 "	48 "	
Prices	$1.25	2.00	2.50	5.00	7.00	

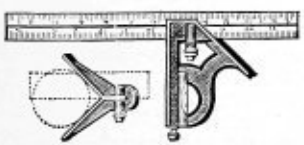
SLIDE-CALIPER RULES



No. 296

No. 296, 3 inch.....each $1.25

STARRETT COMBINATION SQUARE

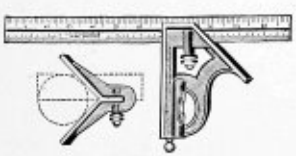


No. 23

9 inch, with center head.....$1.75, without, $1.25
12 " " " " ..... 2.00, " 1.50

STARRETT PATENT COMBINATION SQUARE

With Hardened Blade



No. 11

4 inch, without center head or level.....$0.75
6 " with center head.....$1.50, without, 1.00
9 " " " " ..... 1.75 " 1.25
12 " " " " ..... 2.00 " 1.50
18 " " " " ..... 2.75 " 2.25
24 " " " " ..... 3.25 " 2.75

IMPROVED HOOK RULES

No. 419

Very convenient in taking measurements from round corners, through hubs or pulleys, setting inside calipers, etc. The 6 inch may be carried in the pocket. The hook can be quickly removed by turning eccentric stud one-half round.

Lengths	6 in.	9 in.	12 in.	18 in.	24 in.	36 in.
Prices	$1.00	1.40	1.75	2.50	3.00	5.75

"RELIABLE" TRY SQUARES

No. 60

Graduated Blade, Not Hardened

Length of Blade	Length of Beam	
4 inch	$2\frac{5}{16}$ inch	each $1.00
5 "	3 "	" 1.15
6 "	$3\frac{5}{8}$ "	" 1.25
9 "	$5\frac{1}{16}$ "	" 2.00
12 "	6 "	" 2.75

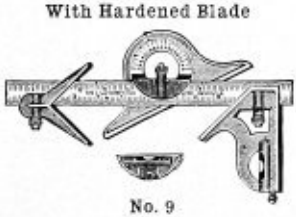
GRADUATED HARDENED STEEL SQUARES

No. 63

2 inch.....each $1.50
3 " ..... " 2.00
4 " ..... " 2.50
6 " ..... " 3.50
9 " ..... " 5.50
12 " ..... " 6.50

COMBINATION SETS

With Hardened Blade



No. 9

9 inch, set complete.....$3.75
12 " " " 4.00
18 " " " 4.75
24 " " " 5.25

STARRETT'S TOOLS

IMPROVED FIRM-JOINT CALIPERS
Inside and Outside

Outside

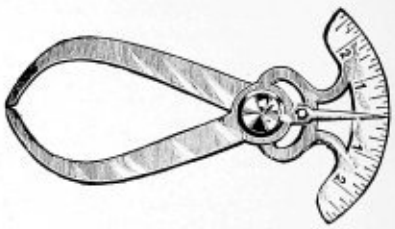
3 inch	each,	$0.40
4 "	"	.50
5 "	"	.55
6 "	"	.65
8 "	"	.80
10 "	"	.90
12 "	"	1.00
14 "	"	1.50
16 "	"	1.75
18 "	"	2.10
20 "	"	2.50
24 "	"	3.00

The above sizes refer to the length of the calipers.

Their capacity is about one-third greater than the size given.

Inside

NO. 3 REGISTER CALIPERS, INSIDE AND OUTSIDE
Cast Steel, with Set Screw, Nickel Plated



3 inch	each,	$0.65
4 "	"	.75
5 "	"	.90
6 "	"	1.00

THE FAY PATENT OUTSIDE AND INSIDE CALIPERS
With Spring Nut

Outside No. 75

	Solid Nut	Spring Nut
2½ inch, each	$1.00	$1.15
3 " "	1.00	1.15
4 " "	1.10	1.25
5 " "	1.10	1.25
6 " "	1.35	1.50
8 " "	1.60	1.75

Inside No. 74

	Solid Nut	Spring Nut
2½ inch, each	$1.00	$1.15
3 " "	1.00	1.15
4 " "	1.10	1.25
5 " "	1.10	1.25
6 " "	1.35	1.50
8 " "	1.60	1.75

These calipers will be sent with Spring Nut, unless otherwise ordered.

WING DIVIDERS

5 inch	each,	$0.60
6 "	"	.65
8 "	"	.90
10 "	"	1.15
12 "	"	1.40
15 "	"	2.30
18 "	"	3.45
24 "	"	4.70

YANKEE SPRING DIVIDERS

	Solid Nut	Spring Nut
2½ inch, each	$0.65	$0.80
3 " "	.70	.85
4 " "	.75	.90
5 " "	.80	.95
6 " "	.85	1.00
8 " "	1.10	1.25

Sent with Solid Nut, unless otherwise ordered.

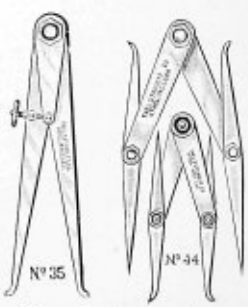
PERFECTED FIRM-JOINT SCREW-ADJUSTING CALIPERS

The screw adjustment for fine measurements, the improved joint which may be set to any degree of uniform tension, the shape and stiffness of the legs, quickness and wide scope of adjustment, all go to make this caliper a leader in its line.

Nos. 34 and 35

4 inch, each,		$0.90
6 "	"	1.00
8 "	"	1.25
10 "	"	1.50
12 "	"	1.75
14 "	"	2.00
16 "	"	2.25
18 "	"	2.50
20 "	"	2.75
24 "	"	3.50
30 "	"	6.00
36 "	"	7.00

DOUBLE CALIPERS



These instruments, as will be seen from the engraving, combined dividers, inside and outside calipers. They have our improved firm friction joints.

No. 44

6 inch, each,		$1.25
8 "	"	1.50

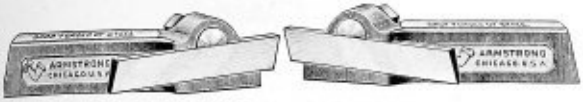
ARMSTRONG

ARMSTRONG CUTTING-OFF TOOLS

Blades have Clearance-Both Sides

All Sizes Straight and Off-Set

STRAIGHT CUT-OFF TOOL



LEFT HAND CUT-OFF TOOL — RIGHT HAND CUT-OFF TOOL

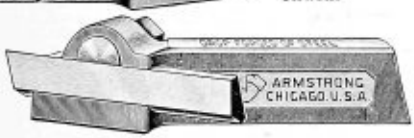
Price Includes One Self Hardened Steel Blade and Drop Forged Wrench

No. Left Hand Off-Set	No. Straight Shank	No. Right Hand Off-Set	Size of Shank inches	Size of Blades inches	Complete Each	Extra Blades Each
.....	....	00-C	$\frac{1}{16}$x $\frac{3}{4}$	$\frac{3}{32}$x $\frac{9}{16}$	$1.65	$0.25
30-L	20	30-R	$\frac{3}{8}$x $\frac{7}{8}$	$\frac{3}{32}$x $\frac{5}{8}$	1.65	.25
31-L	21	31-R	$\frac{1}{2}$x1$\frac{1}{8}$	$\frac{1}{8}$x $\frac{3}{4}$	1.80	.35
32-L	22	32-R	$\frac{5}{8}$x1$\frac{3}{8}$	$\frac{1}{8}$x $\frac{7}{8}$	2.30	.45
33-L	23	33-R	$\frac{3}{4}$x1$\frac{5}{8}$	$\frac{1}{8}$x1	3.00	.60
34-L	24	34-R	$\frac{7}{8}$x1$\frac{3}{4}$	$\frac{1}{8}$x1$\frac{1}{8}$	3.80	.75
35-L	25	35-R	1 x2	$\frac{1}{4}$x1$\frac{1}{4}$	4.75	.95
36-L	26	36-R	1$\frac{1}{8}$x2$\frac{1}{8}$	$\frac{1}{8}$x1$\frac{1}{8}$	6.50	1.25

ARMSTRONG SIDE TOOLS
Off-Set Shank

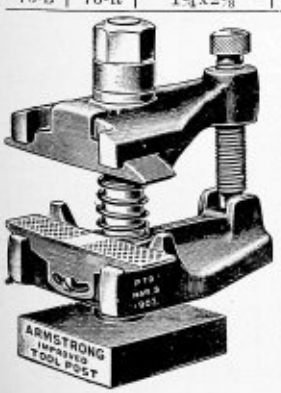
Right Hand Off-Set Tool for working close up toward the chuck.

Left Hand Off-Set Tool for working toward tail stock of lathe.



Price Includes One Self-Hardened Steel Blade and Drop Forged Wrench

No. Left Hand	No. Right Hand	Sizes Shank Inches	Sizes Cutter inches	Complete Each	Extra Cutters Each
70-L	70-R	$\frac{5}{8}$x $\frac{7}{8}$	$\frac{1}{2}$x $\frac{5}{8}$x 4$\frac{1}{2}$	$2.20	$0.45
71-L	71-R	1$\frac{1}{8}$x1$\frac{1}{8}$	$\frac{1}{4}$x $\frac{3}{4}$x 5	2.40	.50
72-L	72-R	$\frac{5}{8}$x1$\frac{3}{8}$	$\frac{1}{8}$x1 x 6	3.00	.75
73-L	73-R	$\frac{3}{4}$x1$\frac{5}{8}$	$\frac{3}{8}$x1$\frac{1}{4}$x 7	3.90	1.15
74-L	74-R	$\frac{7}{8}$x1$\frac{3}{4}$	$\frac{1}{16}$x1$\frac{3}{8}$x 8	4.90	1.35
75-L	75-R	1 x2	$\frac{1}{2}$x1$\frac{1}{2}$x 9	6.50	1.85
76-L	76-R	1$\frac{1}{4}$x2$\frac{1}{8}$	$\frac{5}{8}$x1$\frac{5}{8}$x10	8.50	2.50



IMPROVED LATHE TOOL POST
Points of Superiority

It is stronger and stiffer than the ordinary tool post, will not slip or chatter and consequently it will do more accurate work.

As there is no side projection, it is peculiarly adapted for working close up to the chuck.

The open side design permits rapid and convenient change and adjustment of tools.

The body parts and jaws are drop forged of steel, hardened, and other parts are bar steel.

THE THREADING TOOL

Simplicity, Strength and Permanence of Adjustment Are Prominent Features of This Tool

Price Includes One Single Point Cutter and Wrench

No.	Sizes of Shank inches	With V or U.S. Cutter, Each	With Whitworth Cutter
00T	$\frac{3}{4}$x $\frac{5}{8}$x 5	$2.25	$2.50
50	$\frac{7}{8}$x $\frac{3}{4}$x 5	2.25	2.50
51	$\frac{1}{2}$x1 x 6	2.75	3.10
52	$\frac{5}{8}$x1$\frac{1}{4}$x 7	3.50	4.00
53	$\frac{3}{4}$x1$\frac{1}{2}$x 8	4.50	5.00
54	$\frac{3}{4}$x1$\frac{5}{8}$x 9	5.50	6.00
55	1 x1$\frac{3}{4}$x10	7.50	7.70

Price List of Cutters

No.	00T and 50		51		52		53 and 54		55
Shape of Thread	Single Point	Chaser	Single Point	Chaser	Single Point	Chaser	Single Point	Chaser	Single Point Only
V	$0.45	$0.90	$0.55	$1.05	$0.70	$1.20	$0.90	$1.30	$1.25
U. S.....	.50	.90	.60	1.05	.75	1.20	.95	1.30	1.35
Whitworth.	.75	1.25	.90	1.40	1.15	1.65	1.40	1.80	1.95

NOTE. — In ordering tools equipped with U. S. or Whitworth cutters be careful to specify number of threads per inch wanted. Tools equipped with single point V cutter will always be shipped unless otherwise specified.

List of Cutters Furnished

Sharp V, Whitworth and U. S. Standard.

Single Point Cutters

No. 00T and 50, all standard pitches, 6 to 20, inclusive
" 51, " " " 5 " 20, "
" 52, " " " 4 " 20, "
" 53, 54 and 55, " " " 3 " 20, "

Chaser Cutters

No. 00T and 50, 14, 16, 18, 20, 24*
" 51, 11$\frac{1}{2}$,* 12, 13, 14, 16, 18, 20, 24*
" 52, 8, 9, 10, 11, 11$\frac{1}{2}$,* 12, 13, 14, 16, 18, 20
" 53 and 54, 8, 9, 10, 11, 11$\frac{1}{2}$,*, 12, 13, 14, 16, 18, 20
*V thread only.

STRAIGHT SHANK

LEFT HAND TOOL

A rigid handy tool for planer and shaper work.

Will do as heavy work as any forged tool of same size.

RIGHT HAND TOOL

Price Includes One Self-Hardened Steel Blade and Drop Forged Wrench

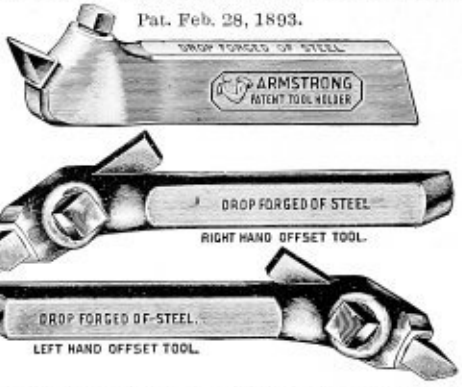
No. Left Hand	No. Right Hand	Sizes Shank inches	Sizes Cutter inches	Complete Each	Extra Cutters Each
81-L	81-R	$\frac{1}{2}$x1$\frac{1}{8}$x 6	$\frac{1}{2}$x $\frac{5}{8}$x 6	$2.40	$0.55
82-L	82-R	$\frac{5}{8}$x1$\frac{1}{4}$x 6	$\frac{3}{4}$x $\frac{3}{4}$x 6$\frac{1}{2}$	3.00	.65
83-L	83-R	$\frac{3}{4}$x1$\frac{1}{2}$x 7$\frac{1}{2}$	$\frac{7}{8}$x1 x 8	3.90	1.15
84-L	84-R	1 x1$\frac{1}{4}$x 9	$\frac{3}{4}$x1$\frac{1}{4}$x 9$\frac{1}{2}$	4.90	1.35
85-L	85-R	1$\frac{1}{8}$x2 x11	$\frac{7}{8}$x1$\frac{3}{8}$x11$\frac{1}{2}$	6.50	1.85
86-L	86-R	1$\frac{1}{4}$x2$\frac{1}{4}$x13	$\frac{5}{8}$x1$\frac{1}{2}$x13$\frac{1}{2}$	8.50	2.50
87-L	87-R	1$\frac{1}{2}$x2$\frac{3}{8}$x15	$\frac{7}{16}$x1$\frac{5}{8}$x15$\frac{1}{2}$	12.00	3.75

Improved Lathe Tool Post Price List

No.	For Tools	For Lathes	Each
1-T	$\frac{1}{2}$x1 inch and less	12 to 14 in. swing	$5.50
2-T	$\frac{5}{8}$x1$\frac{1}{8}$ and $\frac{3}{4}$x1$\frac{1}{4}$ in.	16 " 18 " "	7.00
3-T	$\frac{3}{4}$x1$\frac{1}{2}$ " $\frac{7}{8}$x1$\frac{5}{8}$ "	20 " 22 " "	9.00
4-T	$\frac{7}{8}$x1$\frac{5}{8}$ " 1x1$\frac{3}{4}$ "	24 " 32 " "	12.00

ARMSTRONG TOOL HOLDERS

STRAIGHT AND OFFSET HOLDERS



Price includes one drop forged wrench and two self-hardening steel cutters.

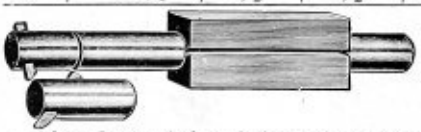
No. Straight Shank	No. Left Hand	No. Right Hand	Size of Holder inches	Size of Cutter in. sq.	Complete	Extra Cutters Each
00-S	00-L	00-R	5/16 x 5/8 x 4 1/2	3/16	$1.60	$0.10
0-S	0-L	0-R	3/8 x 3/4 x 5	1/4	1.65	.12
1-S	1-L	1-R	1/2 x 1 x 6	5/16	1.80	.18
2-S	2-L	2-R	5/8 x 1 1/4 x 7	3/8	2.30	.25
3-S	3-L	3-R	3/4 x 1 1/2 x 8	7/16	3.00	.35
4-S	4-L	4-R	7/8 x 1 5/8 x 9	1/2	3.80	.45
5-S	5-L	5-R	1 x 1 3/4 x 11	5/8	4.75	.65
6-S	6-L	6-R	1 1/4 x 2 x 13	3/4	7.00	1.00
7-S	7-L	7-R	1 1/2 x 2 1/4 x 16	7/8	12.00	1.75
750-S	750-L	750-R	1 5/8 x 2 1/4 x 18	1	17.50	2.50
800-S	800-L	800-R	1 3/4 x 2 3/4 x 20	1 1/8	23.00	3.25

BORING TOOL

This is a stiff, handy tool and can be used on any lathe without fitting. Effectively equal to a dozen forged tools.

Price includes straight and 45° end caps, two cutters and wrench.

No.	Size Shank inches	Diameter Bar inches	Size Cutter in. sq.	Complete	Extra Cutters Each
00B	5/16 x 5/8	1/2	3/16	$3.00	$0.12
8	3/8 x 3/4	9/16	3/16	3.00	.12
9	1/2 x 1	3/4	1/4	3.60	.15
10	5/8 x 1 1/4	15/16	5/16	4.75	.20
11	3/4 x 1 1/2	1 1/8	3/8	6.75	.30
12	7/8 x 1 5/8	1 5/16	7/16	10.00	.40
13	1 x 1 3/4	1 1/2	1/2	14.00	.50



BORING TOOL

Adapted to use in large lathes with clamp tool rest.

Price includes straight and 45° end caps, two cutters and wrench.

No.	Size Shank inches	Diameter Bar inches	Size Cutter in. sq.	Complete	Extra Cutters Each
15	1 5/8 x 2 1/8	1 5/16	7/16	$8.75	$0.40
16	1 7/8 x 2 3/8	1 1/2	1/2	10.50	.50
17	2 1/4 x 2 3/4	1 13/16	5/8	13.75	.70

DROP HEAD TOOL HOLDERS

Head and screw are extra heavy, and the cutter point, while retaining the correct cutting angle, is dropped to a position suitable for use on lathes with high slide rest or low centers, while its "Goose Neck" shape makes it exceptionally efficient when used on the planer.

Price includes two self-hardening steel cutters and drop forged wrench.

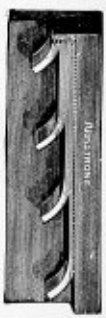
No.	Size of Holder inches	Size of Cutter inches	Height from Bottom of Shank to Cutter Point, inches	Complete	Extra Cutters Each
100	1/2 x 11/16 x 6	3/16	1/2	$1.75	$0.10
101	5/8 x 7/8 x 7 1/2	1/4	3/4	2.00	.12
102	7/8 x 1 1/8 x 9 1/2	3/8	1	3.25	.25
103	1 1/8 x 1 3/8 x 11 1/2	1/2	1 1/4	5.00	.45
104	1 3/8 x 1 5/8 x 14 1/2	5/8	1 1/2	7.50	.65
105	1 5/8 x 1 7/8 x 17 1/2	3/4	1 3/4	12.00	1.00

GANG PLANER TOOL

As each chip is comparatively light, a planer will, with this tool, carry with ease a feed and depth of cut much greater than is possible when using an ordinary tool, and there is much less tendency to "break out" at the end of cut. On large surfaces, this tool has reduced time 50 to 75 per cent.

The illustration shows plan of cut made by Gang Planer Tool with feed set to 1/4 inch, distributing the cut so that each cutter takes but 1/16 inch.

Price includes one set of self-hardening steel cutters, gauge for grinding cutters, and wrench.



No.	Size Shank inches	Size Cutter inches	Feed Adjustment inches	Complete	Extra Cutters Each
61	1 1/4 x 1 3/4 x 7 1/2	3/8 x 1/2	0 to 1/4	$12.00	$0.35
62	1 5/8 x 2 1/4 x 9	1/2 x 11/16	0 to 3/8	20.00	.60
63	2 x 2 1/2 x 11	5/8 x 7/8	0 to 1/2	35.00	1.00

PLANER TOOL

Pat. May 28, 1901.

Works at any Angle, Right or Left Hand. Equals a Complete Set of Forged Planer Tools

Price includes a drop forged wrench and two self-hardening steel cutters.

No.	Size Shank inches	Length inches	Size Cutter inches	Complete	Extra Cutters Each
40	1/2 x 1	6	1/4 x 3/8	$2.75	$0.20
401	5/8 x 1 1/4	8	5/16 x 7/16	3.50	.30
41	3/4 x 1 1/2	10	3/8 x 1/2	4.50	.40
42	1 1/8 x 1 3/4	13	1/2 x 3/4	7.00	.70
43	1 3/8 x 2	16	5/8 x 7/8	11.00	1.00
44	1 7/8 x 2 1/4	18	3/4 x 1	16.00	2.00
45	2 1/8 x 2 3/4	20	7/8 x 1 1/8	25.00	3.00

TOOLS

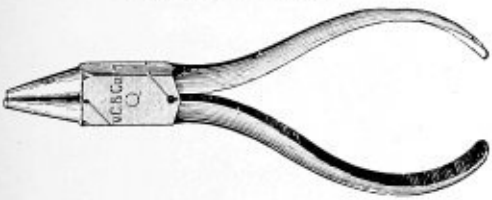
BUTTON'S WIRE CUTTING PLIERS

Hand Forged

Extra Quality, Best Grade

Inch	4½	6	8	10
Per dozen	$3.20	3.50	4.50	5.50

ROUND NOSE PLIERS



Length ....in.	3 to 4½	5	5½	6	6½	7	8
Stubs Pattern..doz.	$3.60	4.00	4.75	5.50	7.00	8.40	10.00

CRONK'S PATENT WIRE CUTTER AND BENDER

Solid Steel, Extra Heavy

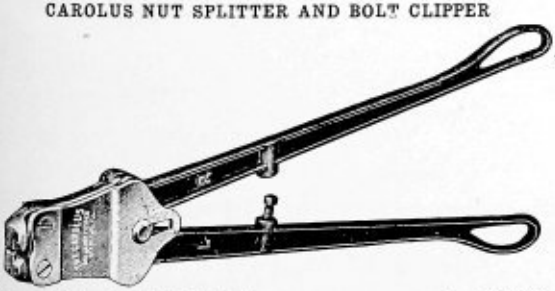
Length, inches	8	10
Per doz	$15.00	$21.00
Each	1.50	2.00

GAS PLIERS

Cast Steel, Best Quality, Polished

Length, inches	7	8	10	12	14
Per doz	$7.50	8.50	10.70	13.00	17.00

CAROLUS NUT SPLITTER AND BOLT CLIPPER

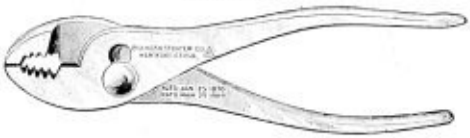


No. 1 Cuts to ⅜ inch Bolt	each,	$5.00
" 3 Cuts to ⅝ inch Bolt	"	10.00

For Carews' wire cutters, see page 58.

PEASE COMBINATION PLIERS

Gas Pliers, Wire Cutters, Wrench and Screw Driver Combined



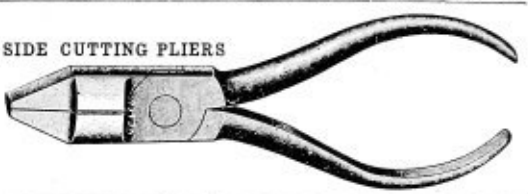
Drop Forged

		Black	Nickel Plated
6 inch	per doz.,	$13.50	$15.00
10 "	"	18.00	21.00
14 "	"	24.00	30.00

FLAT NOSE PLIERS

Length ....in.	3 to 4½	5	5½	6	6½	7	8
Stubs Pattern..doz.	$3.60	4.00	4.75	5.50	7.00	8.40	10.00

SIDE CUTTING PLIERS

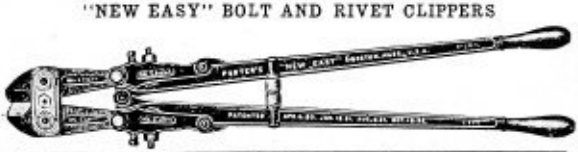


Length.....in.	4	4½	5	5½	6	7	8
Stubs Pattern....doz.	$6.00	6.00	6.50	7.40	8.30	10.50	13.50

KLEIN PATTERN LINEMAN'S PLIERS

Inches	6	7	8
Per dozen	$10.50	13.50	15.00

"NEW EASY" BOLT AND RIVET CLIPPERS

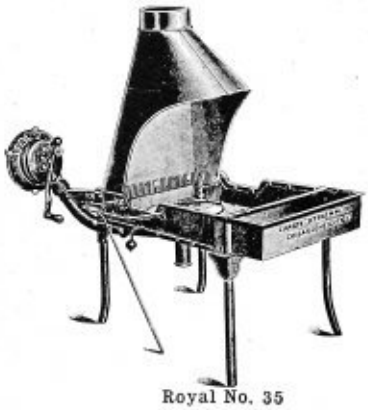


No.	Style	Cuts Bolts up to ins.	Length, inches	Weight, lbs.	Each
0	New Easy	5/16	18	3	$3.75
1	"	3/8	24	5¾	5.00
2	"	1/2	30	7½	7.00
3	"	5/8	36	12½	9.00

FOR ELECTRICIANS

No.	Style	Opens, ins.	Each
1	Special	3/4	$5.50
2	"	1 1/16	7.50
3	"	1¼	10.00

FORGES—ROYAL



Royal No. 35

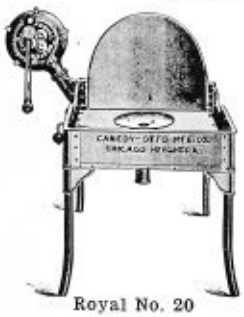
No 35

The Royal No. 35 Forge is nicely adapted for horseshoers, boilermakers, ordinary blacksmith shops, etc. Royal style of blower with cut gears fitted in oil tight case, is used for furnishing blast, the crank of which turns forward or backward, affording a blast as steady and strong as a Power Blower. A welding heat on 4 inch iron can easily be made in ten minutes.

Hearth 30x36 inches. Fan 12 inches.

Height 30 inches. Length over all 44 inches.

Without water tank, weight 195 lbs.....each, $60.00
With water tank, weight 225 lbs..... " 65.00



Royal No. 20

No. 20

Capacity to heat 4 inch iron in 10 minutes.

Hearth 30x36 inches. Fan 12 inches. Height 30 inches. Length over all 44 inches.

Without water tank, wt. 190 lbs.....each, $58.00
With water tank, wt. 220 lbs..... " 63.00

Royal No. 37

No. 37

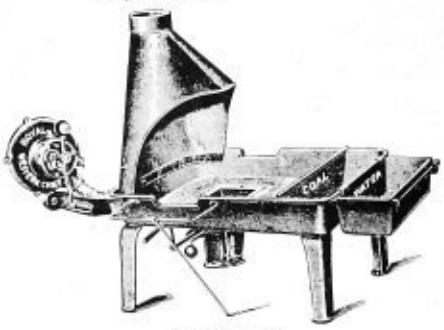
Fan, 10 inches. Hearth, 24x24 inches. Height, 30 inches.

Crank Turns Forward or Backward.

Capacity to heat 3½ inch iron.

This Forge has a duck nest Fire-pot with side and center blast Tuyere Ball. The legs are of steel, U shaped, riveted to the hearth and strongly braced at the bottom.

No. 36 (With shield), weight 135 pounds.....each, $40.00
" 37 (With hood), weight 140 pounds..... " 44.00



Royal No. 8

No. 8

Fan, 12 inches. Hearth, 37½x41 inches.
Height, 26 inches. Over all, 37½x51 inches.

Crank Turns Forward or Backward.

Capacity for Largest Work.

This Forge has solid Fire-pot with side and Center Blast Tuyere Ball, also Tool Rest and Racks.

Plain, no Tank, no Hood, weight 435 lbs.....each, $65.00
With Tank, no Hood, weight 500 lbs..... " 70.00
With Hood, no Tank, weight 450 lbs..... " 70.00
With Tank and Hood (as illustrated), weight 515 lbs. " 75.00

FORGES

WESTERN CHIEF

The Largest Portable Forges Made

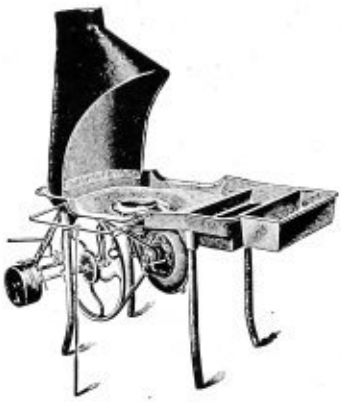
No. 1

No. 1. Hearth 31½x45½ in., fan 14½ in., height 30 in., length 53 in., capacity to heat 4½ in. iron. Has solid fire-pot with Tuyere ball furnishing side and center blast. Is equipped with brass boxes and oil cups throughout.

	Each
With one tank, wt. 315 lbs.	$50.00
" two tanks, " 345 "	55.00

No. 1½. Dimensions and capacity same as No. 1. This Forge is equipped for belt power. Has blast gate to regulate blast.

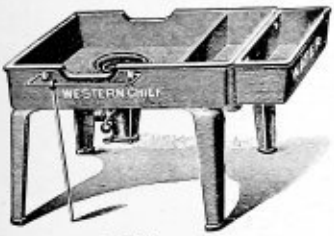
	Each
With one tank, wt., 315 lbs.	$53.00
" two tanks, " 345 "	58.00
" one tank and hand power, wt., 330 lbs.	57.00
With two tanks and hand power, wt., 360 lbs.	62.00



No. 1½

Nos. BB AND XBB

A stationary blast forge, very large, heavy and strong. Is cheaper and much handsomer than a brick or stone forge.



BB Forge

BB Sizes—Hearth 37½x41 in. Over all 37½x51 in. Height 26 inches.
XBB Sizes—Hearth 38x50. Over all 38x60. Height 26 inches.

Description	BB	XBB
Plain, no water tank, and without hood	$35.00	$40.00
With water tank (as illustrated)	40.00	45.00
" half hood, no water tank	40.00	45.00
" water tank and half hood	45.00	50.00

These forges are intended for shops supplied with power blast, or can be used with ordinary bellows or blower, if desired. Are equipped with the fire-pot, with side and center blast Tuyere ball. Ashes are conveniently removed; has tool rest and racks, and lever attachment to blast gate, by which the smith easily regulates the blast.

Nos. 2, 3, 3½, 4, 5

No. 2

No. 2. Hearth 23x34 in., fan 12 in., height 30 in., wt., 195 lbs. Equipped with brass boxes and oil cups. Has duck nest fire-pot — capacity to heat 3 inch Iron ..... each, $36.00

No. 3. Same as No. 2. Except that it is fitted with hood, wt., 200 lbs ..... each, $40.00

No. 3½. Same as No. 3, with pulley for power, wt. 205 lbs. $45.00

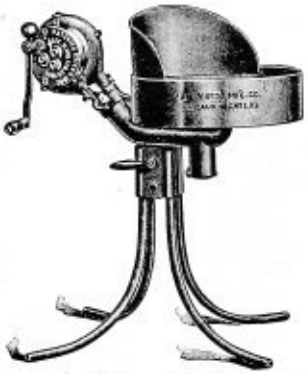
No. 5. Hearth 22 in., fan 9 in., height 33 in., wt., 125 lbs., capacity to heat 2½ in. iron $27.00

No. 4. Same as No. 5 except that it has shield, wt., 120 lbs $24.00

No. 5

FORGES

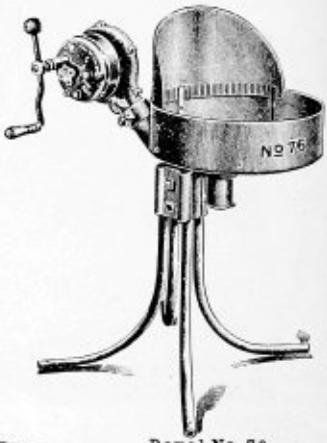
ROYAL



Royal Nos. 40 and 60

Capacity to heat 3½ in. Iron Crank turns forward and backward.

No.	Hearth inches	Fan inches	Height inches	Weight pounds	Each
40	22	10	30	95	$40.00
60	18	10	30	90	35.00
76	18	9	30	85	30.00



Royal No. 76

BUFFALO

No.	Hearth	Weight	Each
625	18 in.	110 lbs.	$35.00
625A	22 "	120 "	38.00
625B	24 "	130 "	41.00

Buffalo No. 625

42 inches high over all.
Diameter of fan case 12 in.
All measure 32 inches to top of fire pan.

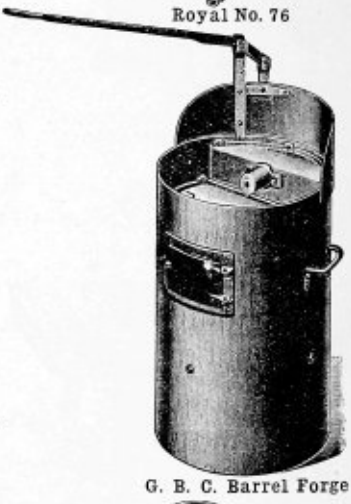
G. B. C. BARREL

Dimensions

Height, 36 in.
Diameter, 19 in.
Hearth, depth 7 in.
Tuyere 2¼x3½ in.
Lever, from fulcrum, 25 in.
Weight, 91 lbs.

Each.....$25.00

Operated by bellows.



G. B. C. Barrel Forge

CHAMPION

Champion No. 401

No. 401. Made with adjustable ball bearings; hearth, 18 inches diameter; height, 30 inches; fan, 9 inches diameter; weight, 90 pounds.

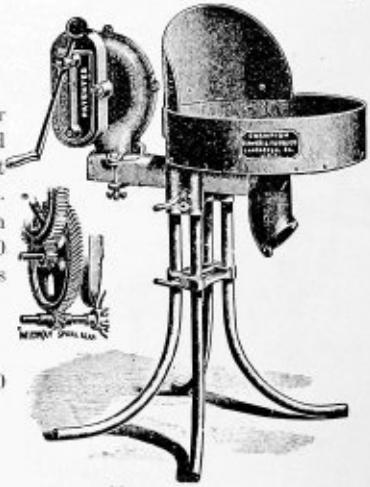
Each.....$35.00

The parts are structural steel. Run noiselessly. Can be readily set up and taken apart. Crank turns either way to produce the blast. Will weld 3½ to 4 inch iron in ten minutes.

No. 78. Midway or Cross Spiral Geared Steel Hearth Rivet Forge, with Shield. Hearth 18 inches in diameter. Height 30 inches. Fan 10 inches in diameter.

Weight 135 lbs.

Each.....$30.00



Champion 78 No.

BUFFALO COMPRESSED AIR FORGE

COSTS LESS THAN TWO CENTS A DAY TO OPERATE

The remarkably low cost to operate is due to the fact that, instead of operating entirely by compressed air as do other forges, the Buffalo models transform the free outside air into a large volume of air at high pressure, thus securing operating power at practically no cost.

No. 22C

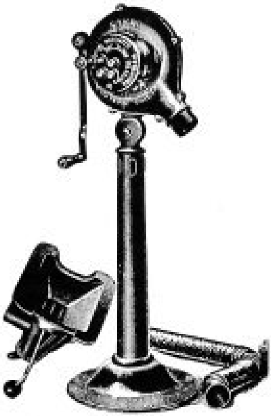
The feature of this design is a compound injector which transforms a small amount of air at a relatively low pressure into a large volume of air at the right pressure for a fire. This is accomplished by compounding at three different stages, each time taking a large amount of free air with it. Once the needle valve is adjusted no further regulation is required. Will operate with equal economy at any pressure between 15 lbs. and 100 lbs. No tiring arm motion to produce the blast and both hands are free for work. Steel plate construction with three angle iron legs encircled by a ring base give a firmness recommending the forge for scaffold work.

Number	22C	22AC	22BC
Height	32 in.	32 in.	32 in.
Diam. of fire pan	18 "	22 "	24 "
Depth of fire pan	6 "	7 "	7 "
Weight	40 lbs.	47 lbs.	50 lbs.
Each	$20.00	$23.00	$26.00

No. 23C

The working mechanism of this forge is exactly the same as used in No. 22C except that the shape of the body is entirely new. This novel design and the extra quality sheet steel used give a wonderful strength and rigidity — it can be knocked around and abused to the extreme without danger to the good working of the forge. The openings in the base section give ready access to the regulating valve while the extra deep fire pan permits of a great number of rivets being in the fire at one time.

Height	26 inches
Diam. fire pan	16 inches
Depth fire pan	8 "
Diam. base	18 "
Weight	44 lbs.
Each	$20.00



BLOWERS

ROYAL

No Belts, no Clutches, no Ratchets.

The Blower Case is constructed to take the fewest elbows in piping, thereby saving about 10 per cent of blast force, besides valuable room which is occupied by other blowers.

The Crank turns forward or backward, as best suits the operator.

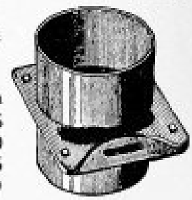
The Gears are Phosphor Bronze and Steel, cut as accurately as those of a watch.

The Blast is very powerful, and as positive and steady as a power blower and takes less labor to operate than others. The after-blast is strong and lasting.

Fire-pot inside measurement is 8x9½ inches and 4 inches deep. Requires no clay.

Fan, 12 inches; weight, 135 lbs. . . . . .each, $28.00

BLAST GATES

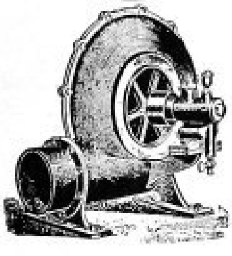


For opening and closing blast pipes on cupolas, forges and furnaces.

Cast Iron

Size	Outside Diam.	Each	Size	Outside Diam.	Each
No. 1	2½	$1.25	No. 5	5	$2.25
" 2	3	1.50	" 6	6	2.50
" 3	4	1.75	" 7	7½	3.25
" 4	4½	2.00	" 8	8	3.50

SMALL PRESSURE BLOWERS
For Forge Fires, etc.



These blowers are adapted to forge fires and small, light cupola work. They are very strong and durable, smooth running, and handsome in appearance. Size P3 and P5 have grease cup in addition to oil cup, so that should oil run dry the grease cup will continue to lubricate and prevent heating. Built for service.

No. of Blower	Height in Inches	Diameter of Inlet	Diameter of Outlet	Diameter of Pulley	Face of Pulley	Revolutions per min. 3-oz. Blast for Boiler Fires	Revolutions per min. 4-oz. Blast for Forge Fires	No. of Forge Fires	Sq. ft. of Boiler Grate surface supplied by Blower	Weight, lbs.	H. P. Required about	Each
P 1	10	3¼	2¾	1⅞	1¼	3675	4640	1	2	15	¼	$12.00
P 2	15	4½	4¼	3	2	3000	4000	2	5	35	⅓	18.00
P 3	18	5¼	4¾	3	2	2600	3600	4	6	50	1	20.00
P 4	20	6½	5¾	3½	2½	2300	3200	5	8	70	1¼	28.00
P 5	24	7	7½	4⅜	3¼	1928	2680	7	10	105	1¾	33.00

THE CHAMPION ONE-FIRE VARIABLE SPEED ELECTRIC BLACKSMITH BLOWER

This Special One-Fire Variable Speed Electric Motor is a new and especially designed motor for blacksmiths' use. It has five (5) different speeds which gives the mechanic five (5) different blasts, which will meet every requirement from a light fire to a fire that will put a welding heat on a 4-inch axle in the shortest possible time.

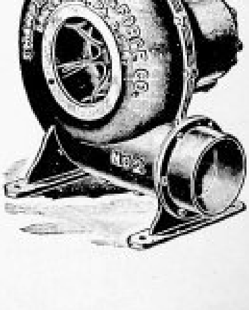
Before ordering a Blower driven by elecrticity it is very necessary to understand that two distinctly different currents are supplied by practically all electric plants, and therefore, a purchaser of an electrically driven Blower must get the following information from the plant that manufactures the electric current:

1st. Find if the current is direct or alternating. 2nd. If direct current it is necessary that you find the voltage only. 3d. If alternating current, you must find cycles or alternations and voltage. 4th. 60 cycles or 7,200 alternations furnished regulary. 5th. Both currents will be furnished regularly for either 110 or 220 volts. 6th. Other cycles or voltages are special and require correspondence.

We guarantee the cost of consumption of electricity to run this motor to not be over 2½ to 5 cents per day of ten hours. This depends on the size fire.

No. 1 Champion One-Fire Variable Speed Electric Blacksmith Blower with Five Speeds. Weight 35 lbs. Each. $36.00

THE CHAMPION DIRECT-CONNECTED ELECTRIC BLOWERS



The number of forge fires given in the table below can only be considered as a guide to go by, as it all depends on the size of the fires wanted, and in what location the Blower as well as the Forges are placed. The best results are obtained when the blower is close to the fires and elbows or especially short turns are avoided. To get the highest results out of a blower run by electricity, it must be understood that there are times in electric plants in many cities when they are drawn upon practically to their limit for current. At such times the voltage is reduced, so that the speed of the blower will be more or less reduced. In order to overcome this, it is always safe to buy the blower fully large for the work intended.

No. of Blower	Height in Inches	Inside Diam. of Inlet	Inside Diam. of Outlet	No. of Forge Fires	Phase	Cycles	Alter-nations	Volts, Direct and Alternating Currents	Direct Current Each	Alternating Current Each
2	18	5¾	4¾	1 to 4				110 or 220	$45.00	
2	18	5¾	4¾	1 to 4	Single	60	7200	110 or 220		$50.00
4	25½	7½	7½	1 to 9				110 or 220	100.00	
4	25½	7½	7½	1 to 9	2 or 3	60	7200	200 or 400		115.00

3½-inch Blast Gate, the size required for blacksmith fires, $1.50.

POST DRILLS

No. 0½
Single Geared, Hand-feed

No. 0
Self-feed, Fast and Slow Speed

No. 00
Self-feed, Two Speeds

WESTERN CHIEF

No. 0½. Bores 0 to ¾ inch. Drills to center of 12-inch circle. Up and down run of spindle, 2¾ inches. Up and down run of table, 9½ inches. Greatest distance from table to spindle, 9½ inches. Weight, 50 pounds.....each, $5.50

No. 0. Bores 0 to ¾ inch. Drills to center of 12-inch circle. Up and down run of spindle, 2¾ inches. Up and down run of table, 9½ inches. Greatest distance from table to spindle, 9½ inches. Takes bits with ½-inch shanks. Weight, 75 pounds.....each, $7.50

No. 00. Bores from 0 to 1¼ inches. Drills to center of 15 -inch circle. Up and down run of spindle, 3-inches. Up and down run of table, 10¾ inches. Greatest distance from spindle to table, 13 inches. Size of pulleys for power, 8x2⅛ inches, should run 200 revolutions per minute. Weight, 110 pounds. Spindle bored for ½ or ⅛ inch shank bits. Always state size when ordering.....each, $10.00

No. 2
Double Geared. Self-feed, with three different speeds to feed; slow medium and fast

No. 15
Changeable Speed

No. 7
Automatic Self-feed
Fast and slow speed, instant change

No. 2. Slotted, rotating, swinging table. Drills to center of 15-inch circle. Bores 0 to 1½ inches. Up and down run of spindle, 3¼ inches. Up and down run of table, 13 inches. Greatest distance from table to spindle, 13 inches. Size of pulleys for power, 8x2⅛ inches. Should run 200 revolutions per minute. Weight, 125 pounds.....each $14.50

Spindle bored for ½ or ⅛ inch shank bits. Always state size when ordering.

No. 15. Drills to center of 19-inch circle. Bores 0 to 1½ inches. Up and down run of spindle, 4 inches. Up and down run of table, 11¾ inches. Greatest distance from table to spindle, 13¼ inches. Size of pulleys, 8x2½ inches. Should run 200 revolutions per minute. Spindle bored for ½ or ⅛ inch shank bits. Always state size when ordering. Weight, hand power, 180 pounds. Hand and power, 190 pounds. It has two speeds, fast and slow, and for heavy drilling the slow speed is instantly obtained by inserting the crank handle in rim of fly wheel. The shaft on this Drill (when ordered hand power) is left extended, to receive pulleys at any time thereafter.

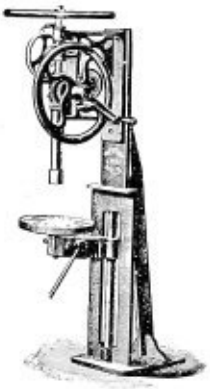
Hand Power (as illustrated).....each $17.50
Hand and Pulley Power..... " 19.50

No. 7. Drills to center of 21-inch circle. Bores 0 to 1½ inches. Up and down run of spindle, 5 inches. Up and down run of table, 16½ inches. Greatest distance from table to spindle, 19½ inches. Size of pulleys for power, 10⅜x2½ inches. Should run 175 to 180 revolutions per minute. Spindle bored for ½ or ⅛-inch shank bits. Always state size when ordering. Weight, hand power, 275 pounds. Pulley power, 295 pounds. The shaft on this drill (when ordered hand power) is left extended to receive pulleys any time thereafter.

Without Pulleys, Hand Power only.....each $33.50
With Pulleys (as illustrated)..... " 37.05

FLOOR DRILLS

WESTERN CHIEF



No. 8

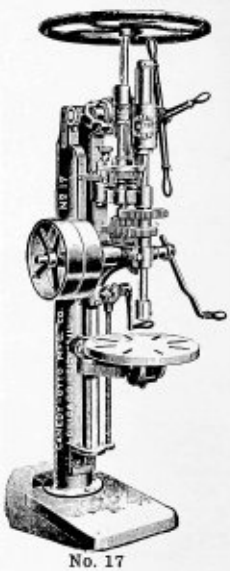
No. 8. A self-feed hand drill. It has slotted table which in addition to swinging from side to side also rotates. The table support is a vise. A second speed for heavy work is obtained by inserting handle into fly wheel. Drills to center of 23-inch circle. Bores 1½ inches. Takes ½ or ⅝ inch round shank drill. Height, 60 inches. Weight, 380 lbs. ..... each $30.00

No. 9. Same as No. 8. With tight and loose pulleys attachment, and both hand and power. Pulleys, 8x2¼ inches. Speed 180 revolutions. Weight, 190 lbs. ..... each $35.00

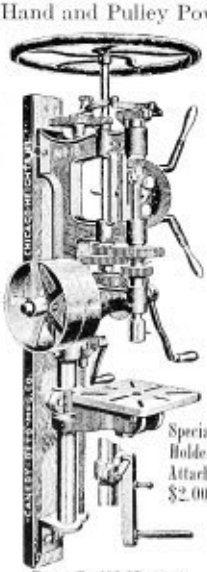
No. 9

No. 17. Straight and Bevel Gears are cut.
Fast and slow speed, instant change.
Hand Lever Feed, also Horizontal, Gear Driven, Positive self feed, changed to fast, slow or medium instantly. These feeds work independently of each other, and bit is lifted quickly.
Raise and lower device to Table.
Drills to center of 24-inch circle.
Bores 0 to 1½ inches.
Up and down run of spindle, 8½ inches.
Up and down run of table, 15½ inches.
Greatest distance from table to spindle, 18½ inches.
Height of Machine, 71 inches.
Floor space, 15x26 inches.
Size of Pulleys, 10¾x2½ inches. Should run 175 to 180 revolutions per minute.
Spindle bored for ½ or $\frac{31}{64}$ inch shank bits. Always state size when ordering.
When specially ordered we will bore Spindle to receive No. 3 Morse Taper.
Weight, 560 pounds.

Hand and Pulley Power ..... each $65.00



No. 17



Post Drill No. 18

No. 18. Spindle is equipped with Ball Bearings.
Straight and Bevel Gears are cut.
Fast and slow speed, instant change.
Horizontal, positive, gear driven self feed, changeable instantly to fast, slow or medium as desired.
Hand lever feed, working independent of self feed; the most powerful of any post drill on the market. Permits a quick lift or return of spindle, an excellent feature for wood boring.
Raise and lower device to table.
Drills to center of 21-inch circle.
Bores 0 to 1½ inches.
Up and down run of table, 16½ inches.
Greatest distance from table to spindle, 18 inches.
Size of pulleys 10¾x2½ inches. Should run 175 to 180 revolutions per minute.
Spindle bored for ½ or $\frac{31}{64}$ inch.
Shank bits. Always state size when ordering.
Weight (hand power) — 300 lbs.,
Weight (hand and power) — 320 lbs.
When ordering hand power only, shaft is left extended so that pulleys may be placed at any time.

Hand Power, only ..... each $40.50
With Pulleys, as illustrated ..... " 44.50

ANVILS

VULCAN

The face of this anvil is one solid piece of tool steel, thoroughly welded to the body of the anvil by a patented process. It is then accurately ground and tempered.

The horn is covered with and its extremity is made entirely of tough, untempered steel.

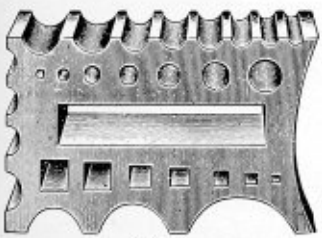
The body of the anvil is made from superior pig iron, and being much more solid than wrought iron, the work being forged receives the full force of the blow. The face and horn of the anvil are warranted to be thoroughly welded to the body and not to separate.

No.	Weight about	Each	No.	Weight about	Each
00	5 lbs.	$2.00	10	100 lbs.	$10.00
0	10 "	2.75	11	110 "	11.00
1	15 "	3.25	12	120 "	12.00
2	20 "	4.00	13	130 "	13.00
3	30 "	4.50	14	140 "	14.00
4	40 "	5.25	15	150 "	15.00
5	50 "	6.00	16	160 "	16.00
6	60 "	6.50	17½	175 "	17.50
7	70 "	7.25	20	200 "	20.00
8	80 "	8.00	22½	225 "	22.50
9	90 "	9.00	25	250 "	25.00

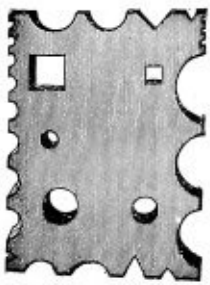
PETER WRIGHT'S

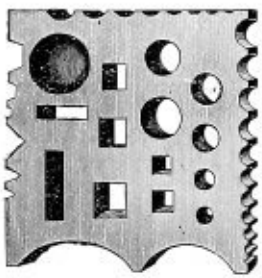
85 to 500 lbs. Base	per lb.	$0.12
Extra for 71 to 84 lbs.	"	.01
" " 61 " 70 "	"	.01½
" " 51 " 60 "	"	.02
" " 50 lbs. and lighter	"	.03

SWAGE BLOCKS


No. 0

No. 0½


Nos. 1, 2 and 3


Nos. 4, 4½ and 5

No.	Measures inches	Weight about pounds	No.	Measures inches	Weight about pounds
0	4 x14x19½	165	3	4⅛x11x15	145
0½	3⅞x15x15	150	4	4 x15x15	165
1	3⅝x10x14	100	4½	4½x18x18	255
2	3⅞x11x15	125	5	6 x24x24	625

Price, per lb. ..... $...

CONES OR MANDRELS

Size No.	Height inches	Diameter at Base inches	Diameter at Top inches	Estimated Weight pounds	Price per lb.
1	32	8	1	55	....
1½	40	10	1	90	....
2	48	12	1	115	....
3	52	14	1	140	....
4	54	16	2	200	....

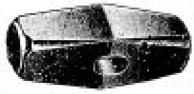
STRUCTURAL TOOLS

STEEL

RIVETING TONGS

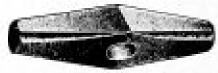
20 inches long .... each, $0.75
30 " " .... " 1.00

FLOGGING HAMMERS



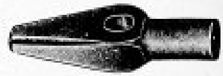
5 to 8 lbs... ...per lb., $0.20

PLUGGING HAMMERS



2 to 3 lbs.... ....per lb., $0.25

RIVETING HAMMERS



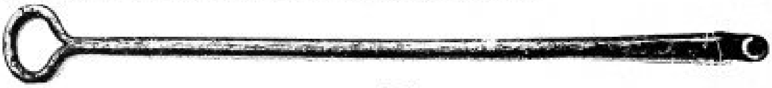
2 to 3 lbs.... ....per lb., $0.35

STRAIGHT DOLLIES

Each $2.50

OFFSET DOLLIES

Each $2.75

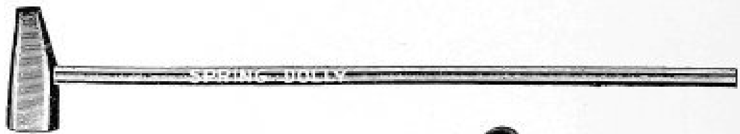


HANDLE DOLLIES

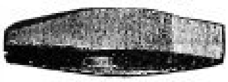
Each $4.25

SPRING DOLLY

Each $7.00

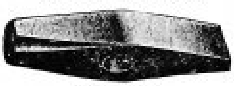


COLD CUTTERS



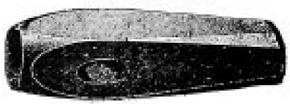
4 lbs., 1½-inch face.....each, $1.00

RIVET BUSTERS



4 to 5 lbs.
1½-inch face, each, $1.25

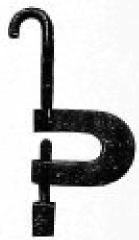
RIVET SNAPS



Size of Rivet	Each
⅜ inch	$0.90
½ "	.90
⅝ "	1.35
¾ "	1.50
⅞ "	1.75
1 "	2.25

BACKING OUT PUNCHES

Size of rivets, ⅜, ½ ⅝, ¾, ⅞ ..... each, $1.00

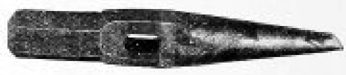


HOISTING CLAMPS

Each..$6.00

GOUGES

3 lbs...each, $1.00



STRUCTURAL WRENCHES

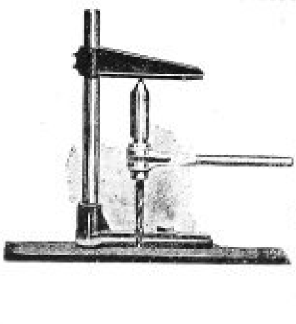
See page 465.

DRIFT PINS

For ½ inch rivets, ... each, $0.14
For ⅝ " " .... " .15
For ¾ " " .... " .17
For ⅞ " " .... " .20

DIAMOND POINTED CHISELS

3 lbs. .... each, $1.00

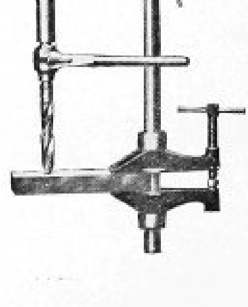


OLD MAN

Cut shows method of operation, including Drill.

Nos.	1	2
Height of post, in..	20	26
Radius of arm, in	10	12
Price, each,	$8.00	10.00

THE DOUBLE-JAW DRILLING POST



No. 1 is suitable for drilling all size holes up to ¾ inch. Radius of arm 10 inches, weight 25 pounds.

No. 2 is extra strong. Post is long enough to take No. 5 ratchet and drill up to 1½-inch hole. Radius of arm 12 inches, weight 33 pounds.

The jaws of both sizes open 4 inches. Can be made special to open any distance. The screws are made of tool steel and tempered. The screw in the lower jaw has a cup-shaped head, a guide and seat for top screw. The screws can be reversed.

No. 1 .... each, $8.00
No. 2................ " 10.00

HAND CHISELS

COLD CHISELS

First Quality

Order by the diameter of Octagon Steel and not by the width of blade.

Size of Octagon Steel.....inches	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
Size of Blade, approximately..... "	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8
Average length..... "	5	5 1/4	5 1/2	6	6 1/2	7	7 1/2	8
" weight.....pounds	1 1/2	2	2 1/4	4	7 1/4	11	16	21
Per dozen.....	$1.40	1.70	2.00	2.60	3.60	5.30	7.00	9.00

MACHINISTS' CAPE CHISELS

First Quality, Crucible Steel

Size of Oct. Steel.... in.	5/16	3/8	1/2	5/8	3/4	7/8	1
Size of Cutting Edge.....in.	1/8	3/16	1/4	3/8	1/2	5/8	3/4
Per dozen....	$2.00	2.25	3.00	4.00	6.00	8.00	10.00

ROUND NOSE CAPE CHISELS

First Quality, Crucible Steel

Size of Oct. Steel.....in.	3/8	1/2	5/8	3/4	7/8
Size of Point..... "	3/16	1/4	3/8	1/2	5/8
Per dozen.....	$2.50	3.25	4.50	6.50	8.50

ROUND NOSE CHISELS

First Quality, Crucible Steel

Size of Oct. Steel.....in.	3/8	1/2	5/8	3/4	7/8
Size of Point..... "	3/16	1/4	3/8	1/2	5/8
Per dozen.....	$2.50	3.25	4.50	6.50	8.50

DIAMOND POINT CHISELS

First Quality, Crucible Steel

Size of Oct. Steel.....in.	3/8	1/2	5/8	3/4	7/8
Size of Point..... "	3/16	1/4	3/8	1/2	5/8
Per dozen.....	$2.50	3.25	4.50	6.50	8.50

TRACK CHISEL

1 3/4 in. square, Tool Steel, 4 1/2 lbs, each per lb., $0.40

PUNCHES

TRACK PUNCH

1 1/2 in. square Tool Steel..... per lb. $0.40

BLACKSMITH ROUND EYE PUNCH

Sizes of Point, 1/4 to 1 inch

Tool Steel..... per lb. $0.40

BLACKSMITH SQUARE-EYE PUNCH

Any Size Point

Tool Steel..... per lb. $0.40

ROUND HAND PUNCH

Size of Point, 3/16 to 3/4 inch..... per doz. $1.50

SLEDGES

BLACKSMITHS'

Cross Pein

5 lbs. and over	per lb.	$0.30
3 to 5 lbs.	"	.40
Under 3 lbs.	"	.50

Double Face

5 lbs. and over	per lb.	$0.30
3 to 5 lbs.	"	.40
Under 3 lbs.	"	.50

Double Face Striking Hammers

5 lbs. and over	per lb.	$0.30
3 to 5 lbs.	"	.40
Under 3 lbs.	"	.50

Stone Sledge Hammers

5 lbs. and over	per lb.	$0.30
3 to 5 lbs.	"	.40
Under 3 lbs.	"	.50

Coal Sledges

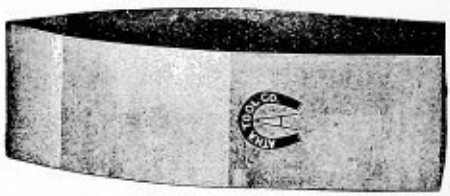
5 lbs and over	per lb.	$0.30
3 to 5 lbs.	"	.40

HAMMERS

Single Face Mason Hammers

5 lbs. and over	per lb.,	$0.50
3 to 5 lbs.	"	.55
Under 3 lbs.	"	.60

Double Face, same price as Single Face.



Spalling Hammers

5 lbs. and over	per lb.	$0.40
3 to 5 lbs.	"	.55
Under 3 lbs.	"	.60

Double Face, same price as Single Face

Stone Cutters' or Hand-Drilling Hammers

5 lbs and over	per lb.,	$0.40
3 to 5 lbs.	"	.50
Under 3 lbs.	"	.55

MAULS

Ship

4 to 8 lbs. ..... per lb., $0.42

R. R. Spike

5 lbs. to 12 lbs. ..... per lb., $0.30

PICKS

RAILROAD OR CLAY

Weight, lbs.	4 to 5	5 to 6	6 to 7	7 to 8
Per doz.	$13.00	14.00	15.00	16.00
Weight, lbs.			8 to 9	9 to 10
Per doz.			$18.00	20.00

DRIFTING

Weight, lbs.	3	4	4½	5	6
Per doz.	$12.50	$14.00	$15.00	$16.00	$17.50

TAMPING

Weight, lbs.	6 to 7	7 to 8	8 to 9
Per doz.	$18.00	19.00	20.00

FIREMEN'S COAL

Weight, lbs.	4½	5	6
Per doz.	$17.00	18.00	20.00

STONE PICKS

5 to 8 lbs. ..... per lb. $0.40

QUARRY PICKS

5 to 8 lbs. ..... per lb. $0.40

MATTOCKS

ADZE EYE

Long Cutter, 6 lbs.	per doz.	$17.00
Short cutter, 5½ lbs.	"	16.50

PICK MATTOCKS

Weight, 6 lbs.	per doz.	$17.00
Weight, 5 "	"	16.00

GRUB HOES

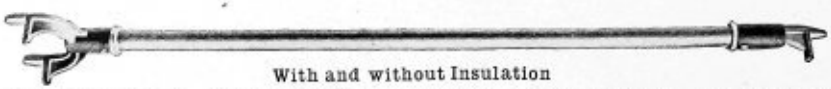
Nos.	1	2	3
Weight, lbs.	3½	4	4½
Per doz.	$13.00	13.50	14.00

ASPHALT MATTOCK

Oil Finished

Weight 7 lbs.	per doz.	$23.00
" 8 "	"	24.00
" 9 "	"	25.00

HUNTINGTON STANDARD TRACK GAUGE



With and without Insulation

This is the ordinary pattern Huntington Gauge. The construction is less expensive than the best grade, the heads simply being riveted on and the ends are not milled. Made in insulated and non-insulated styles. Unless specified we ship without insulation.

Price, without insulation, per doz..... $10.00
" with weather-proof insulation, per doz.. 15.00

INSULATED CIRCULAR TRACK GAUGE

This gauge has radial ends and is furnished with and without guard rail attachment.

Price, with guard rail attachment, per doz.... $20.00
" without guard rail attachment, per doz... 18.00

WOODEN TRACK LEVEL

With and without Insulation

Made of white pine with three coats of paint, thus overcoming the tendency to warp and twist shown in common maple levels. It is thoroughly bound in steel. Shows proper distance to set guard rails.

Price, without insulation, per doz..... $15.00
" insulated, per doz..... 15.00

McMANUS GAUGE AND LEVEL

The gauge glass has rubber packing, which protects it and greatly lessens the likelihood of levels being broken by rough and careless handling.

Price..... per doz., $30.00

JIM CROW RAIL BENDER

Made from best grade of forging steel, with machine cut, square thread, steel screw, either with or without lever. Most compact and simplest device for bending and straightening light rails and car irons.

Size No.	Capacity, Size of Rails, lbs.	Span of Claws, inches	Diameter of Screw, in.	Hole for Lever, inches	Weight, lbs.	Each
0	16	14	1¾	1	40	$7.10
1	25	16	2	1	65	13.70
2	50	20	2¼	1⅛	85	18.20
3	75	24	2½	1¼	130	20.20
4	85	28	2⅝	1⅜	145	22.70
5	100	28	2¾	1⅜	170	25.20

RATCHET RAIL BENDER

The lightest bender manufactured, and can be carried and operated by one man. Used largely in coal mines for bending or straightening rails and car irons.

Size No.	Capacity, Size of Rails, lbs.	Span of Claws, inches	Diameter of Screw, inches	Weight, lbs.	Each
1	20	16	1¾	50	$35.20
2	30	20	2	70	40.70
3	45	24	2¼	110	49.50
4	60	28	2½	170	60.00

BARS

CROW BAR

PINCH BAR

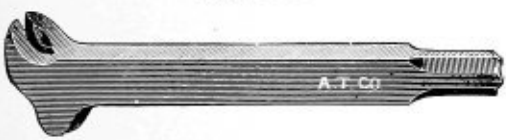
LINING BAR

Crow, Pinch, Lining Bars, steel, 12 lbs. to 50 lbs. ..... per lb., $0.04½
Crow, Pinch, Lining Bars, steel, under 12 lbs. ..... per lb.,

SHACKLE BAR

Price each $4.00

CLAW BAR

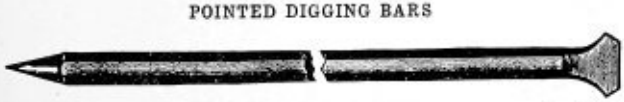


Extra Quality ..... per lb., $0.12

TAMPING BAR

Per lb $0.06

POINTED DIGGING BARS



Octagon steel, 1 inch x 7 feet ..... each, $3.00
Octagon steel, 1⅛ inch x 8 feet ..... " 4.00
Round steel, 1 inch x 7 feet ..... " 2.75
Round steel, 1⅛ inch x 8 feet ..... " 3.50

DIGGING AND TAMPING BAR

Octagon steel, 1⅛ inch x 8 feet ..... each, $4.50
Round steel, 1 inch x 7 feet ..... " 3.00
Round steel, 1⅛ inch x 7 feet ..... " 3.50
Round steel, 1⅛ inch x 8 feet ..... " 4.00

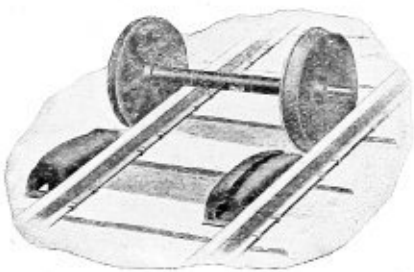
RAIL FORKS

15 lbs. ..... per lb., $0.25

RAIL TONGS

17 lbs. ..... per lb., $0.30

ALDON CAR REPLACERS



No. 1.—Cast steel, weight 200 lbs. per pair, suitable for heaviest equipment, and for rails of 100 lbs. or less ..... per pair $20.00

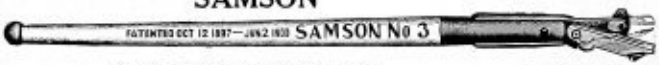
No. 2—Cast steel, weight 180 lbs. per pair, suitable for all modern equipment, and for rails 85 lbs. or less ..... per pair 18.00

No. 3—Malleable iron, weight 100 lbs. per pair, suitable for Electric Suburban Service, Light Engines and cars, and for rails of 65 lbs. or less ..... per pair 15.00

No. 4.—Malleable Iron, weight 50 lbs. per pair, suitable for Industrial and Mine Railways, for equipment not exceeding 15 tons, and for rails 35 lbs. or less 12.50

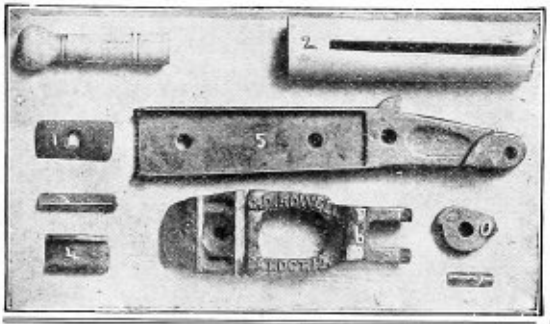
CAR MOVERS

SAMSON



One extra Spur with each.

Samson, weight 15 lbs.....each $5.00
" Locomotive, weight 20 lbs..... " 6.00



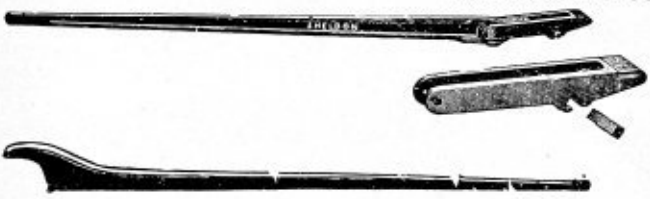
	Samson		Locomotive	
	No.	Each	No.	Each
Cam (in end of arm 5)...	0	$0.20	10	$0.25
Clamp (to hold spur 3)...	1	.20	11	.20
Wood Handle.....	2	1.00	12	1.25
Spur (state if to be square or triangular).....	3	.25	13	.25
Spring (that slides on rail)	4	.25	14	.25
Arm (bolted to handle 2)	5		15	1.50
Shoe (for triangular spur)	6	1.25	16	1.50
Shoe (for square spur)...	8		17	.05
Steel Pin (goes through cam).....	....	....	....	....

ROWELL

Each.....$5.00

No. 19—Malleable Iron Shoe.....$1.25
" 21— " " Clamp..... .20
" 22—Split Maple Handle..... 1.00
" 23—Tool Steel Spurs, per set..... .25
" 25—Malleable Iron Cam..... .20
" 26— " " Arm..... 1.25

THE SHELDON



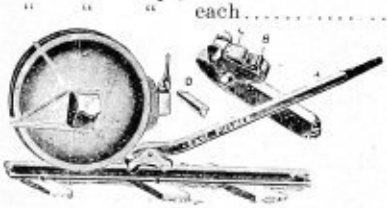
It has the following points of merit: It does not slip, works under any style of brake, compound power, wearing part changeable. Weight, 18 lbs.; length, 5 feet.

Price each, with one extra Heel.....$5.00
" extra Heels, three..... 1.00
" " " each..... .35

THE CHAMPION

All steel Bar, with adjustable hardened steel Grip, which is changeable. It will work on any style of brake or wheel, getting its purchase from the rail to the wheels; does not slip on ice or grease. Weight, 15 lbs.; length, 5 feet.

Price each, with one extra Grip.....$4.00
" extra Grips, three..... 1.00
" " " each..... 35



THE EASY

Wt. each 20 lbs.
Each with one extra Heel...$5.00
Extra Heels, each..... .20
Extra Shoes, each.....$2.50

THE SPECIAL

Double Power and Speed

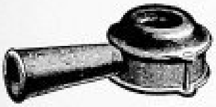
Weight 24 lbs.

Each $5.00

BLACKSMITHS' TOOLS

TUYER IRONS

DUCK'S NEST


Duck's Nest

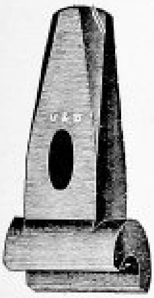
No. 1. Single, weight 11 lbs..........each $0.75
No. 1. Double, weight 17 lbs..........each 1.00

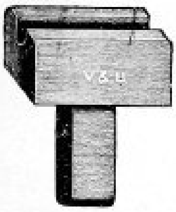
CLARK

No. 1. Weight about 18 lbs..........each $1.20
No. 2. Weight about 21 lbs..........each 1.55
No. 3. Weight about 26 lbs..........each 1.80
No. 4. Weight about 45 lbs..........each 2.60

Clark

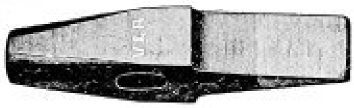
SWAGES

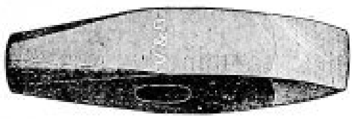

Top Swage


Bottom Swage

All sizes............ per lb., $0.42

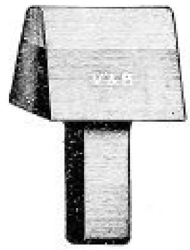
CHISELS

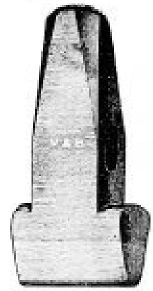

Blacksmiths' Hot Chisels


Blacksmiths' Cold Chisels

1¼, 1⅜ and 1½ inches, per lb., $0.42

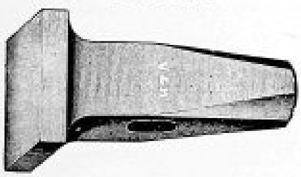
FULLERS


Bottom Fuller


Top Fuller

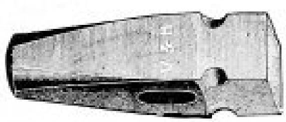
All sizes............per lb., $0.42

FLATTERS



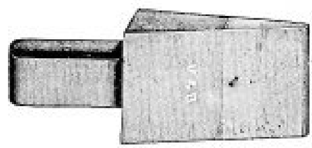
2 to 4 inches, by quarters .... per lb., $0.42

SET HAMMERS



1¼ to 2 inches, by eights, per lb., $0.42

HARDIES



⅝, ¾, ⅞, 1 and 1¼ inch shanks.......... per lb., $0.42

TONGS

Flat

No. 1. 18 inch, weight 1¾ lbs.
No. 2. 20 " " 2½ "
No. 3. 22 " " 3 "
No. 4. 24 " " 3½ "
All sizes.............................. per lb., $0.20

Bolt

18 inch, for ¼ and 5/16 round iron.
20 " " ⅜ " ½ " "
22 " " ⅝ " ¾ " "
24 " " ⅞ to 1¼ " "
All lengths, 18 to 24 inch..............per lb., $0.25

PINCERS

Blacksmiths'

Oil Finished, Polished Jaws

Sizes, inches................	10	12	14
Per dozen	$9.00	10.00	12.00

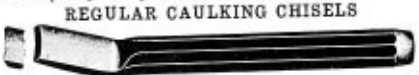
FARRIERS' KNIVES

Wostenholm's horn handles, ⅝ and ¾ inch blades.............................. per doz., $6.00
Extra blades.......................... " " 4.50

PLUMBERS' TOOLS

Hammer forged of high-grade octagon crucible steel. Properly shaped and tempered.

REGULAR CAULKING CHISELS



Out-end. In-end.	Per doz.
In-end, 5/8 in. octagon steel. Ends 1/8 to 3/4 in. thick, width 3/4 to 1 in.	$4.00
Out-end, 5/8 in. octagon steel. Ends 1/8 to 1/4 in. thick, width 3/4 to 1 in.	4.00

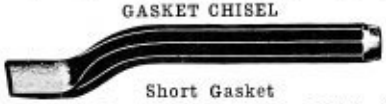
YARNING CHISELS

1/2 in. octagon steel.	6 in. blade	per doz.	$5.00
1/2 " " "	8 " "	"	6.00
5/8 " " "	10 " "	"	7.00
5/8 " " "	12 " "	"	8.00

SPRING PACKING CHISELS

1/2 in. octagon steel	6 in. blade	per doz.	$5.00
1/2 " " "	8 " "	"	6.00
5/8 " " "	10 " "	"	7.00
5/8 " " "	12 " "	"	8.00

GASKET CHISEL



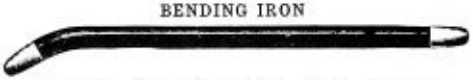
Short Gasket

5/8 in. oct. steel. Length of face 1 in. Width 3/4 in. Thickness 5/16 in.	per doz. $4.00
3/4 in. oct. steel. Length of face 1 in. Width 7/8 in. Thickness 1/4 in.	per doz. 6.00
7/8 in. oct. steel. Length of face 1 in. Width 1 in. Thickness 3/8 in.	per doz. 8.00
1 in. oct. steel. Length of face 1 in. Width 1 in. Thickness 1/2 in.	per doz. 10.00

Long Gasket

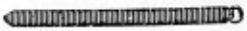
5/8 in. oct. steel. Length of face 3 in. Width 3/4 in. Thickness 5/16 in.	per doz. $5.00
3/4 in. oct. steel. Length of face 3 in. Width 7/8 in. Thickness 1/4 in.	per doz. 7.00
7/8 in. oct. steel. Length of face 3 in. Width 1 in. Thickness 3/8 in.	per doz. 9.00
1 in. oct. steel. Length of face 3 in. Width 1 in. Thickness 1/2 in.	per doz. 11.00

BENDING IRON



Heavy pattern. 5/8 inch round steel. 12 in. long	per doz. $5.00
Light pattern. 1/2 inch round steel. 11 inches long	per doz. 4.05

PIPE BENDING SPRINGS



Size, inches	1	1 1/4	1 1/2	2
Per doz.	$7.50	9.50	12.00	14.00

EXTRA SHORT GASKET CHISEL

1/2 inch octagon steel	per doz. $3.70
5/8 " " "	" 4.00

STUB END CAULKING CHISEL

5/8 inch octagon steel	per doz. $4.00
3/4 " " "	" 6.00

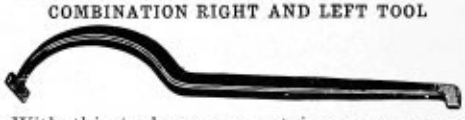
GASKET CHISEL—EXTRA OFFSET

Right hand. 5/8 inch octagon steel	per doz. $6.00
Right hand. 3/4 inch octagon steel	per doz. 8.00
Left hand. 5/8 inch octagon steel	per doz. 6.00
Left hand. 3/4 inch octagon steel	" 8.00

SINGLE RIGHT AND LEFT CAULKING CHISEL—EXTRA OFFSET

5/8 inch octagon steel	per doz. $5.00
3/4 " " "	" 7.00

COMBINATION RIGHT AND LEFT TOOL



With this tool one can get in any corner where neither the straight nor the upright caulking tool can be used. Forged of 3/4 inch square high grade tool steel. Length 15 in. Weight 2 1/4 lbs. per doz. $24.00

ASBESTOS LEAD JOINT RUNNER

It is adapted for soil, water or gas pipes, or a bell pipe of any description where a joint is poured with molten lead. Always ready, and not affected by heat or cold. Red-hot lead does not affect it.

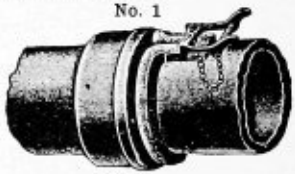
Style No. 1

No.	Inches, Square	Size, Pipe	Each
1	1/2	2, 3 and 4 inch	$1.25
2	3/4	4, 5 and 6 inch	1.50
3	1	6, 8 and 10 inch	2.25
4	1	10, 12 and 14 inch	3.00

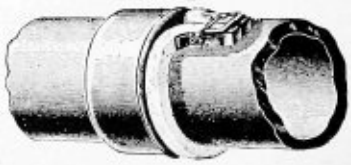
Style No. 2

5	1 1/4	8, 10 and 12 inch	$4.00
6	1 1/4	10, 12 and 14 inch	5.00
7	1 1/4	16, 18 and 20 inch	6.75
8	1 1/4	24 inch	7.75
9	1 1/4	30 inch	8.75
10	1 1/4	36 inch	9.75
11	1 1/4	40 inch	10.75
12	1 1/4	42 inch	11.25
13	1 1/4	48 inch	12.50

No. 1



No. 2



LEAD MELTING FURNACES

No. 1

No. 1 Furnace is constructed of $\frac{3}{16}$-inch boiler steel, strongly riveted and braced. The body is 20 inches in diameter by 24 inches deep. The wheels are 30 inches in diameter, 3-inch tires. It has a heavy cast iron fire pot sitting inside the shell, which protects it from the heat of the fire. The grate is arranged to both dump and shake. The smoke pipe is made of heavy steel, and is attached to a cast iron bonnet on the shell. The fire door is very strong, and is supplied with a draught opening. The wheels are made of steel of ample strength, and revolve on steel axles. The handle is provided with a folding rest that locks in position, so that the furnace always stands solid on three points. When moving the furnace, the rest folds up so that the handle may be attached to the rear of a wagon, if convenient to move in this manner. The kettle is very heavy, and has an inside flange to prevent the molten lead from slopping when the furnace is being moved.

A heavy steel cover is supplied without extra charge.

Capacity of kettle 750 lbs. lead.

Price.....each, $50.00

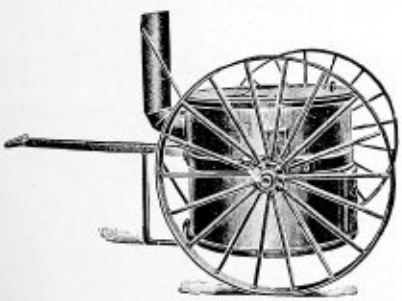
No. 2 furnace is made of $\frac{3}{16}$-inch steel, with cast iron dumping and shaking grate. It is supplied with or without cast iron fire pot inside of shell, as customers prefer. When used without fire pot the outfit is much lighter, but not so durable. The furnace rests on three heavy steel legs, and has four carrying loops riveted to shell so that it can be easily carried by means of two pieces of pipe or iron bars.

A heavy steel cover for kettle is supplied without extra charge.

Capacity of Kettle, 750 pounds lead.

With cast iron fire pot..... $35.00
Without fire pot..... 32.00

No. 2



TAR MELTERS

The shell of this melter is made of $\frac{1}{4}$-inch steel plate, braced in the strongest manner. The wheels are 4 feet in diameter, 3-inch tires. The kettle is of cast iron and is readily removable and can be replaced at a small expense; it is supplied with a heavy hinged steel cover and cast iron grates and linings. Capacity 65 gallons.

Price, complete..... $100.00

SALAMANDERS

Body 16 inches in diameter, 15 inches high, total height 30 inches. $1\frac{1}{8}$x$\frac{1}{8}$ steel band legs, rounded under pan, to prevent cutting. Strongly riveted and braced. Heavy cast iron grate.

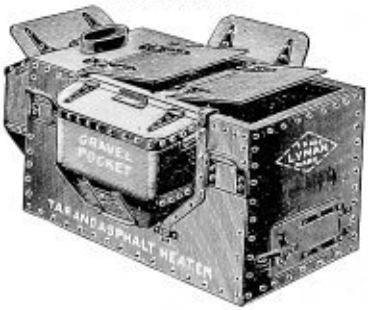
No. 16 gauge steel, with grate.....each, $2.50
" 18 " " " " ..... " 2.00
Grates..... " .40

TAR PAILS AND HEATERS

All work is made of steel (double annealed), with Norway iron trimmings, close riveted.

Heaters, larger than half-barrel, fire on ground. Space left between kettle and jacket so that entire surface heats at once.

HEATER



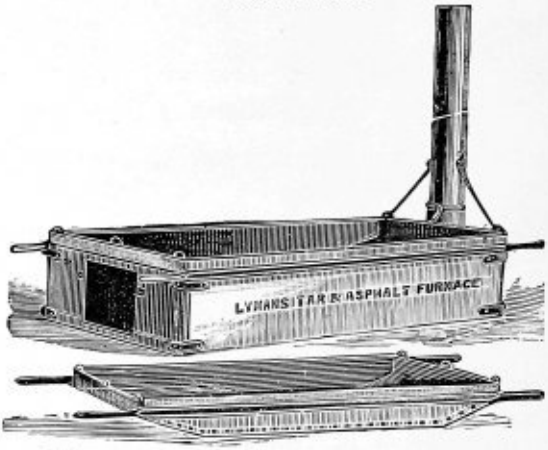
3 Barrel.....$60.00
2 " 50.00
1 " 45.00

With pockets for heating gravel for use on small repair jobs.

3 Barrel Round Tar Heaters.....$60.00
1½ " " " " 45.00
1½ " " " " with pockets 45.00
1½ " " " " without pockets..... 35.00

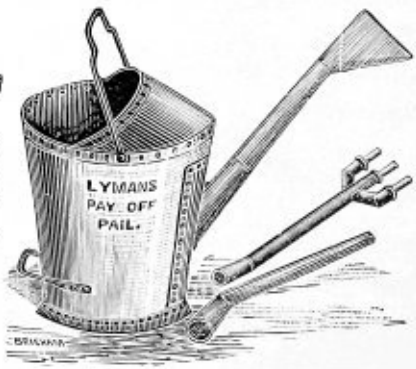
Pockets on large square or round heaters, when ordered.

FURNACE



Sides and ends are easily taken apart and put together. Draft fits either end. Bottom of Mixing Pan, 3x10 feet.

Price.....$140.00



Pay-off Pail.....$5.00
" " Spouts for wood or stone.....each 1.00
3-way Spouts for brick or stone..... 5.00
Carrying Pail..... 3.00

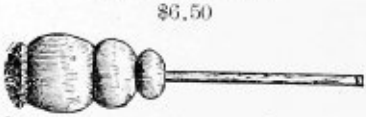
Dipper
$2.50

Hoisting Pail
$4.00

Mop Pail
$4.50

Stock Tub
$7.50

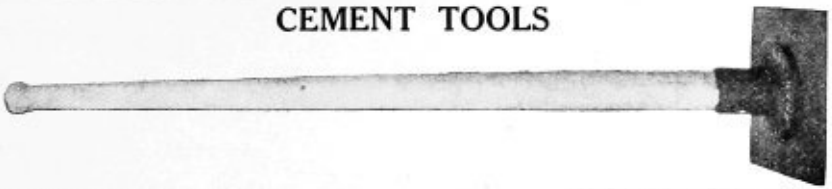
Asphalt Smoothers
$6.50



Mops.....per doz. $....
Mop Yarn..... " lb. $....

For Tampers, see page 519.

CEMENT TOOLS

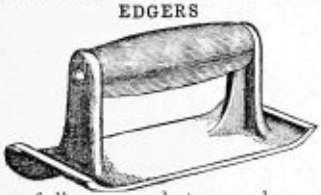


SIDEWALK GROOVER, No. 1

End curves sufficiently short to carry groove into rounded edge and still can be drawn both ways in the process of making the groove.

Each, Iron.....$0.90 Bronze.....$1.80

EDGERS



Very carefully ground to produce a perfectly rounded corner, carrying curve to extreme edge, not leaving a rough corner projectig. common to improperly made edgers.

No. 1. Curve of 3/8 inch Radius.

Each, Iron.....$1.15 Bronze.....$2.30

No. 2. Curve of 3/4 inch Radius.

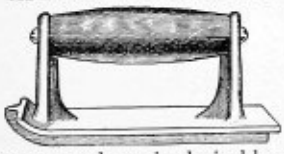
Each, Iron.....$1.15 Bronze..... 2.30

STEEL TUCK POINTERS

Made of steel, well polished. The grooves are accurately milled and extended across the oblique end, a feature essential to a good tool. They will outlast two of the ordinary cast tool, and are unexcelled.

1/4 in. diam. curve, 5 in. groove	each	$1.00
3/8 " " " 5 " "	"	1.10
1/2 " " " 5 " "	"	1.20

SIDEWALK GROOVER, No. 2



Square at one end, as is desirable where groove is to be carried into sharp corners.

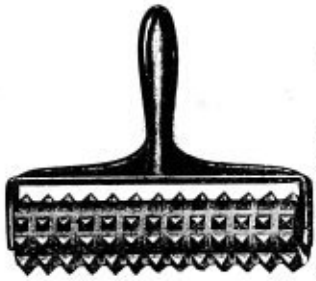
Each, Iron.....$0.90 Bronze.....$1.80

CARRIAGEWAY GROOVER, No. 3

Price, iron	each	$1.10
" bronze	"	2.20

IMPROVED STEEL TAMPERS

8x 8 inches, weight 14 lbs	each	$1.50
10x10 " " 18 "	"	2.00

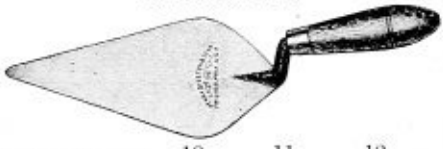


IMPROVED SIDEWALK ROLLER

Made of bronze cast on steel bearings by our special process. This makes a heavy perfect roller, at a materially reduced cost. Accurately machined all over and highly polished.

3 1/2 in. diameter, 10 in. long	each	$15.00
3 1/2 " " 7 " "	"	13.00
Extension handles for above, 4 ft. long		1.50

BRICK TROWELS



Inches	10	11	12	13
Per doz	$10.00	11.00	12.00	13.00

POINTING TROWELS

Inches	5	5 1/2	6	7
Per doz	$4.75	5.00	5.25	5.75

PLASTERERS' TROWELS

Inches, length	10	10 1/2	11	12
" width	4 1/2	4 1/2	4 5/8	4 7/8
Per doz	$12.25	12.25	13.50	13.75

PLASTERERS' CORNER TROWEL

Inside or Outside Angle

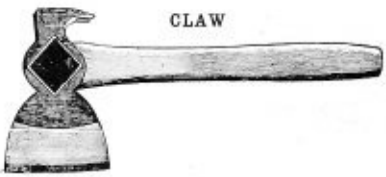
6 inches .....per doz. $7.00

HATCHETS

SHINGLING

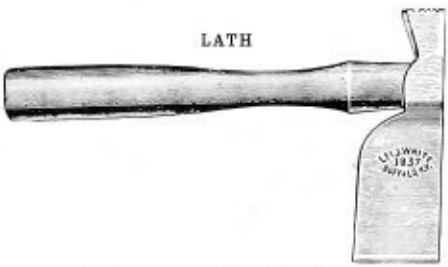
No.	Weight	Width at Bit, in.	Per Dozen
1	1 lb. 1 oz.	3½	$8.00
2	1 " 7 "	3⅞	8.50
3	1 " 13 "	4⅜	9.00

CLAW



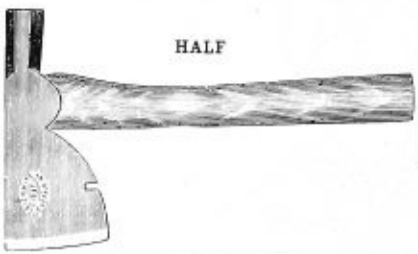
No.	Weight	Width at Bit, in.	Per Dozen
1	1 lb. 3 oz.	3½	$9.00
2	1 " 9 "	3⅞	9.50
3	1 " 15 "	4⅜	10.00
4	2 " 16 "	4¾	10.50

LATH



No.	Width at Bit, inches	Per Dozen
0	2¼	$7.50
1	2½	8.00
2	2¾	8.50
3	3	9.00

HALF



No.	Width at Bit, inches	Per Dozen
1	3⅛	$8.50
2	3½	9.00
3	3⅞	9.50
4	4¼	10.00

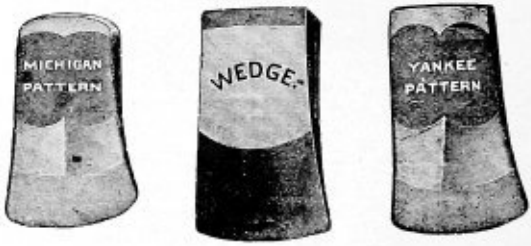
HATCHETS

BROAD

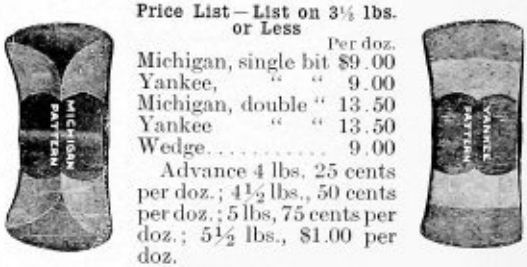
No.	Cut, inches	Weight, lbs.	Per Doz.
1	4	1½	$10.50
2	4½	1¾	11.50
3	5	2⅛	13.00
4	5½	2½	14.50
5	6	2⅞	16.50
6	6½	3¼	18.00
7	7	3¾	19.50
8	7½	4¼	22.00

AXES

MICHIGAN, S. BIT — WEDGE — YANKEE, S. BIT



MICHIGAN, D. BIT — YANKEE, D. BIT



Price List—List on 3½ lbs. or Less

	Per doz.
Michigan, single bit	$9.00
Yankee, " "	9.00
Michigan, double "	13.50
Yankee " "	13.50
Wedge	9.00

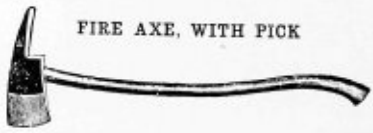
Advance 4 lbs. 25 cents per doz.; 4½ lbs., 50 cents per doz.; 5 lbs, 75 cents per doz.; 5½ lbs., $1.00 per doz.

HANDLED AXES

Assorted Weights

Regular size	per doz.	$10.00
Boys' size	"	8.00

FIRE AXE, WITH PICK



Per doz. Ass't'd, 4½ to 6 lbs. $30.00

ADZES

CARPENTERS'

	White's	Standard
3½ to 4½ inch face.....per doz.	$24.00	$15.00
5 to 5½ " " ..... "	26.00	.....
5¾ to 6 " " ..... "	27.00	.....

RAILROAD

	White's	Standard
5 to 5½ inch face.....per doz.	$26.00	$16.00
5¾ to 6 " " ..... "	27.00	.....

SHIPBUILDERS' PLAIN

	White's Plain	White's with Lip
4 to 4¼ inch face.....per doz.	$30.00	$33.00
4½ to 5 " " ..... "	33.00	36.00

	Standard Plain	Standard with Lip
4 to 4¼ inch face.....per doz.	$20.00	$22.50

WOOD CHOPPER MAULS

OREGON PATTERN

6 to 12 lbs.....per lb. $0.36

WEDGES

TRUCKEE FLARED BIT PATTERN

3 to 10 lbs.....per lb. $0.36

SQUARE HEAD

3 to 10 lbs.....per lb. $0.20

STEEL SAW WEDGES

Small steel Saw Wedge.....per doz.	$5.50
Medium steel Saw Wedges..... "	6.75
Large steel Saw Wedges..... "	10.25

MAULS

SEWER BUILDERS'

Complete with iron ferrules and handles.

5 inch face by 10 inch long.....each	$2.40
6 " " " " " " ..... "	2.50

BARK COVERED

Complete with handles.

4½ inch face by 9 inch long.....each	$1.10
5 " " " 10 " " ..... "	1.30
6 " " " 10 " " ..... "	1.50
6 " " " 12 " " ..... "	1.60

HAMMERS

ENGINEERS'

Single Face

No.	0	1	2	3	4	5	6
W'ght	1 lb. 2 oz.	1 lb. 10 oz.	2 lb.	2½ lb.	3 lb.	3½ lb.	4½ lb.
Per doz.	$12.00	13.00	14.00	15.00	16.00	17.00	19.00

Double Face

No.	0	1	2	3	4
Weight	1 lb. 8 oz.	2 lb.	2 lb. 8 oz.	3 lb.	3 lb. 10 oz.
Per doz.	$14.50	15.50	16.50	18.00	19.50

RIVETING

Plain Eye

No.	0	1	2	3
Weight....	4 oz.	7 oz.	9 oz.	12 oz.
Per doz....	$5.50	5.75	6.00	6.25
No.	4	5	6	7
Weight.....	15 oz.	1 lb. 2 oz.	1 lb. 6 oz.	1 lb. 10 oz.
Per doz.....	$6.50	7.00	7.50	8.00

FARRIERS'

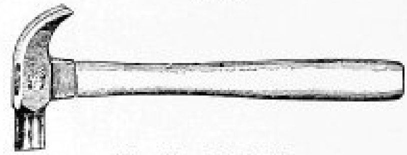
Adze Eye, Octagon Pole

Weight..................	7 oz.	10 oz.	12 oz.	15 oz.
Per doz..................	$7.50	7.75	9.00	9.50

BLACKSMITH'S HAND HAMMER

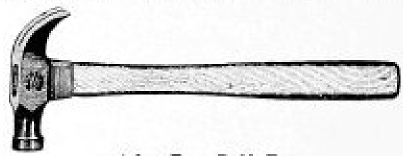
No.	0	1	2	3
Weight........	1 lb. 8 oz.	2 lb.	2 lb. 8 oz.	3 lb.
Per doz........	$13.00	14.00	15.00	16.00
No.	4	5	6	
Weight............	3 lb. 8 oz.	4 lb. 8 oz.	5 lb. 8 oz.	
Per doz............	$17.00	19.00	21.00	

NAIL



Adze Eye, Plain Face

No.	1	1½	2	3
Weight..................	1¼ lb.	1 lb.	13 oz.	7 oz.
Per doz..................	$9.00	8.50	8.00	7.50

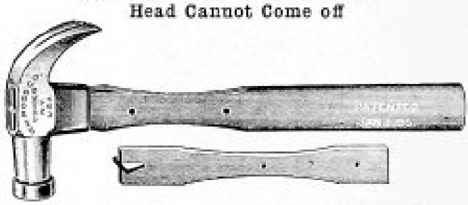


Adze Eye, Bell Face

No.	1	1½	2	3
Weight...............	1¼ lb.	1 lb.	13 oz.	7 oz.
Price per doz..........	$9.00	8.50	8.00	7.50

INVINCIBLE WEDGE HAMMER

Head Cannot Come off

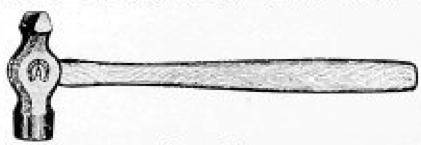


No. 1½........Wt. 16 oz. Per doz............$10.50

MACHINISTS'

Ball Pien

No.	00	0	1	2	3
Weight, lbs. ...	¾	1	1¼	1½	1¾
Per doz.	$12.00	12.50	13.50	14.50	15.50
No.	4	5	6	7	8
Weight, lbs....	2	2¼	2½	2¾	3
Per doz......	$16.50	17.50	19.00	20.50	22.00



Cross Pien

No.	00	0	1	2	3
Weight, lbs....	¾	1	1¼	1½	1¾
Per doz.	$12.00	12.50	13.50	14.50	15.50
No.	4	5	6	7	8
Weight, lbs....	2	2¼	2½	2¾	3
Per doz.......	$16.50	17.50	19.00	20.50	22.00

Weights do not include handles.

HANDLES

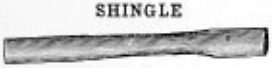
ADZE EYE HAMMER

MACHINISTS' HAMMER

BLACKSMITH HAMMER HANDLES

Length		
11 to 15 inch	per doz.,	$1.05
16 " "	"	1.20
18 " "	"	1.35
20 " "	"	1.60
22 " "	"	1.75

HATCHET, BROAD BENCH OR SHINGLE



Length		
12 and 13 inch	per doz.,	$1.05
14 " 15 "	"	1.15
16 "	"	1.30
18 "	"	1.65

FILE HANDLES

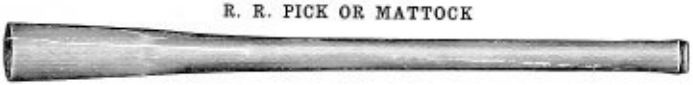
Per doz. $0.25

SLEDGE

MAUL

	Extra	No. 1
Maul, sledge, 34 and 36 inch ..... per doz.	$3.85	$3.00
" " 32 " 30 " ..... "	3.25	2.50
" " 28 " 26 " ..... "	2.95	2.20
" " 24 " ..... "	2.30	1.90

R. R. PICK OR MATTOCK



DRIFTING PICK

POLL PICK

	Extra	No. 1
36 inch ..... per doz.	$6.90	$4.50

ADZE

	Extra	No. 1
Per dozen	$6.05	$4.20

SINGLE BIT AXE

DOUBLE BIT AXE

	Turned		Hand Shaved	
	Extra	No. 1	XXX	XX
Axe, single bit ..... per dozen	$5.75	$3.75	$6.60	$5.40
" double " ..... "	5.75	3.75	6.60	5.40

AUGERS

Ship Augers, with or without Screws

L'HOMMEDIEU PATTERN

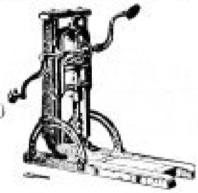
In ordering, specify whether with or without screw.

Sizes inches 16ths.	Twist inches	Price per Dozen	Sizes inches 16ths.	Twist inches	Price per Dozen
4 to 8	7½ to 9½	$7.50	37 and 38	15	$86.00
9 and 10	12	9.00	39 " 40	15	101.00
11 " 12	12	10.50	41 " 42	15	115.00
13 " 14	12	12.00	43 " 44	15	130.00
15 " 16	12	13.50	45 " 46	15	144.00
17 " 18	12	15.00	47 " 48	15	158.00
19 " 20	15	16.50	49 " 50	15	173.00
21 " 22	15	18.00	51 " 52	15	187.00
23 " 24	15	21.00	53 " 54	15	201.00
25 " 26	15	24.00	55 " 56	15	216.00
27 " 28	15	25.50	57 " 58	15	231.00
29 " 30	15	31.50	59 " 60	15	245.00
31 " 32	15	38.00	61 " 62	15	260.00
33 " 34	15	57.00	63 " 64	15	274.00
35 " 36	15	72.00			

PRATT'S RATCHET AUGER HANDLE

Nickel plated, detachable hickory handle. Length 16 inches. Permits use of auger in all positions.

Fits all sizes Augers....each, $2.00



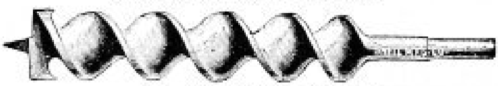
BORING MACHINES

Angular..............each, $6.20

AUGER HANDLES

No. 1. Hickory.......................per doz. $0.70

BORING MACHINE AUGERS



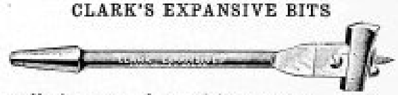
Cast Steel Full Polished.

Size, inches	1	1¼	1½	1¾	2
Per doz.	$15.00	19.00	24.00	28.00	32.00

PRATT'S PATENT AUGER HANDLE

No. 1, 14 in. long; No. 2, 17 in. long. .per doz. $6.00

CLARK'S EXPANSIVE BITS

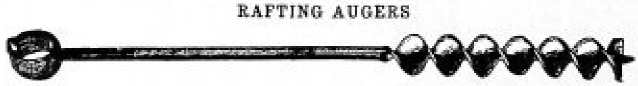


No. 1. Small size, cuts from ½ to 1½ in., each.. $1.50
No. 2. Large size, cuts from ⅞ to 3 in., each.. 2.25

EXTRA CUTTERS FOR CLARK'S BITS

	For Small Bits		For Large Bits	
Nos	1	2	3	4
Inches	½ to ⅞	⅞ to 1½	⅞ to 1¾	1¾ to 3
Per doz	$3.00	3.75	5.25	6.00

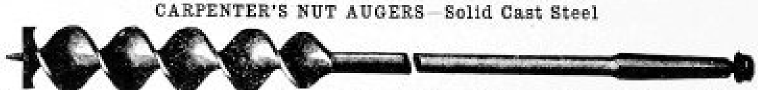
RAFTING AUGERS



Size, inches	1	1¼	1½	1¾	2	2¼	2½	2¾	3	4
Price per doz.	$22.00	27.00	30.00	36.00	42.00	50.00	60.00	63.00	70.00	84.00

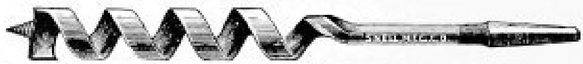
In ordering, specify length of handle and inside diameter of ring.

CARPENTER'S NUT AUGERS—Solid Cast Steel



Size, inches	¾	⅞	1	1⅛	1¼	1⅜	1½	1¾	2	2⅛	2¼	2½	2¾	3
Per doz.	$10.75	12.00	13.25	15.00	17.00	19.00	22.00	26.00	30.00	35.00	40.00	50.00	70.00	90.00

SHIP AUGER BITS—Solid Cast Steel



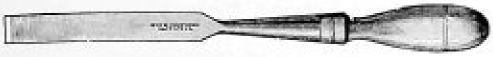
Size, inches	¼	5/16	⅜	7/16	½	9/16	⅝	11/16	¾	13/16	⅞	15/16	1
Per doz.	$6.00	6.00	6.00	6.00	6.00	7.50	7.50	9.00	9.00	10.50	10.50	12.00	12.00

AUGER BITS—Jennings Pattern

Size in 16ths	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	20	22	24
Per doz.	$4.00	4.00	4.00	4.50	5.00	5.50	6.00	7.00	7.00	8.00	8.00	9.00	9.00	10.50	10.50	12.00	13.50	15.00

CHISELS

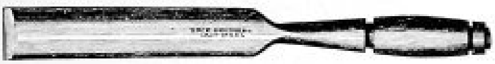
SOCKET FIRMER CHISELS



1 inch has 6 inch blade

Inches...	¼	⅜	½	⅝	¾	⅞	1	1¼	1½	2
Per doz..	$11.00	11.00	12.00	13.00	13.00	14.00	15.00	16.00	17.00	19.00

SOCKET FRAMING CHISELS

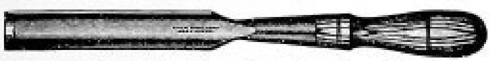


Blades 7 to 8 inches

Inches.....	¼	⅜	½	⅝	¾	1	1¼	1½	2
Per doz....	$15.00		16.00	17.00		18.00	20.00	22.00	26.00

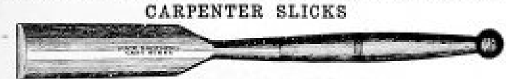
SOCKET PARING GOUGES

Inside Bevel. All 8 inch Blade



Inches.....	¼	⅜	½	⅝	¾	1	1¼	1½	2
Per doz....	$10.00	10.50	11.00	12.00	13.00	15.00	16.50	18.00	21.00

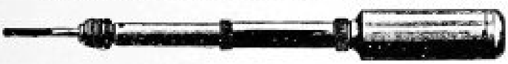
CARPENTER SLICKS



3 inch has 10 inch Blade

Inches............................	2½	3	3½	4
Per doz............................	$45.00	50.00	55.00	65.00

YANKEE AUTOMATIC DRILL



11⅜ inches Length, Including Drill
Nickel Plated, Bores Holes in Hard or Soft Wood

8 Drill Points in Handle, sizes, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64 inch..each $2.00

BAILEY'S IRON SPOKE SHAVES

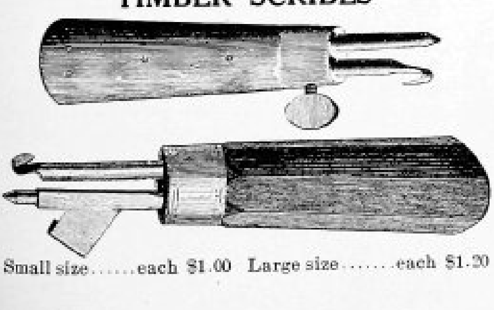
Double Iron, Raised Handle, 10 ins., 2⅛ in. Cutter..each $0.35

CARPENTER'S DRAW KNIFE

Razor Blade

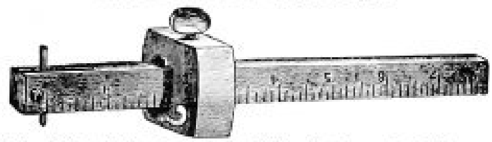
Inches....	8	10	12	14	16
Per doz...	$22.00	25.00	27.00	29.00	32.00

TIMBER SCRIBES



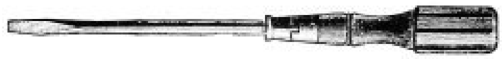
Small size......each $1.00 Large size......each $1.20

MARKING GAUGES



Polished Plated Head, Boxwood Thumb Screw, Oval Bar, Marked Adjusting Steel Point..........................each $0.25

SCREW DRIVERS



Inches.......	2½	3	4	5	6	7	8	9	10	12
Per doz......	$3.00	3.50	4.25	5.00	6.00	7.00	8.00	9.00	10.00	12.00

THE "PERFECT HANDLE" SCREW DRIVER

"All Its Value in Plain Sight"

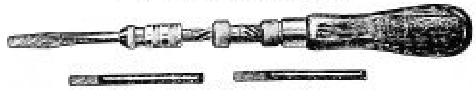
Blade Length, ins.	2	3	4	5	6	7	8	10	12
Diameter..... "	¼	¼	¼	¼	5/16	5/16	⅜	⅜	⅜
Per doz............	$4.25	4.25	4.25	5.00	6.00	7.00	8.00	10.00	12.00

SCREW DRIVER BLADES

Extra Quality

Size, width.................inches	⅜	½	⅝	¾
Each....................................	$0.20	0.20	0.25	0.25
Per doz................................	2.00	2.00	2.50	2.50

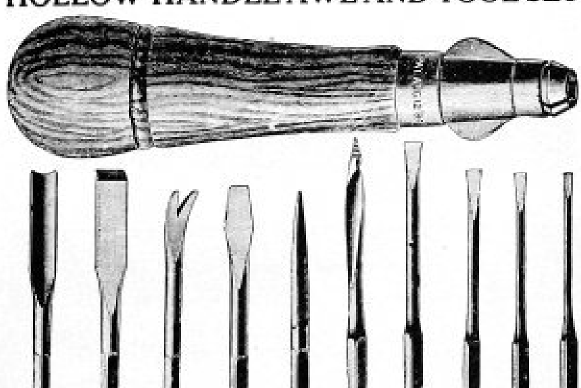
GOODELL PATENT AUTOMATIC INTERCHANGEABLE SCREW DRIVERS



Each with Three Bits

No. 1, length extended 14 inches............	each	$1.75
No. 2, " " 16 "	"	2.00
No. 3, " " 18 "	"	2.25
Extra Bits..	"	.20

HOLLOW HANDLE AWL AND TOOL SET



Consists of Handle with Chisel, Gouge, Tack Claw, Screw Driver, Gimlet, four assorted Brad-Awls and Scratch-Awl.

No. 1, Cocobola or Rosewood Handle....	per doz.	$9.00	each	$0.75
No. 3, Dogwood Handle......................	"	7.00	"	.60
No. 2, Cocobola or Rosewood Handle....	"	18.00	"	1.50

PLANES

BAILEY'S ADJUSTABLE BLOCK

No.	Length inches	Cutter inches	Each
9½	6	1¾	$1.50
17	7	1¾	1.75

IRON SMOOTH

No.	Length inches	Cutter inches	Each
3	8	1¾	$3.00
4	9	2	3.25
4½	10	2⅜	3.75
6	18	2⅜	4.75

IRON JACK

No.	Length inches	Cutter inches	Each
5	14	2	$3.75
5½	15	2¼	4.25

LEVELS

Nos. 104 and 0

No. 30

No. 104. Plumb and Level, arch top plate, two side views, 12 to 18 in.....each, $0.75

No. 0. Plumb and Level, arch top plate, two side views, 24 to 30 in.....each, 1.00

No. 30. Patent adjustable Plumb and Level cherry, arch top plate, duplex side views, tipped, 24 to 30 in.....each, 1.75

IRON FORE

No. 06. 18 inches in length, 2⅜ inch cutter .....each, $4.75

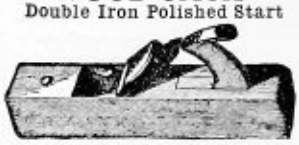
WOOD BENCH

Smooth Double Iron Polished Start

No. 3. Irons 2x 2¼ inches wide .....each, $0.90

WOOD JACK

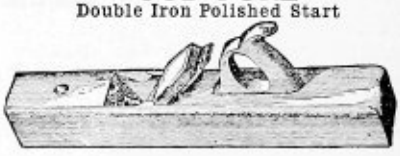
Double Iron Polished Start



No. 15. Irons 2 x 2¼ inches.....each, $1.00

WOOD FORE

Double Iron Polished Start



No. 21. Irons 2⅜ x 2⅝ inches.....each, $1.70

PLUMB BOBS

	No. 1	No. 2	Nos. 00 and 0
No. 1.	Wt. 9 oz.		each, $0.13
No. 2.	" 9½ "		" .14
No. 00.	" 18 "		" .25
No. 0.	" 42 "		" .42

ADJUSTABLE

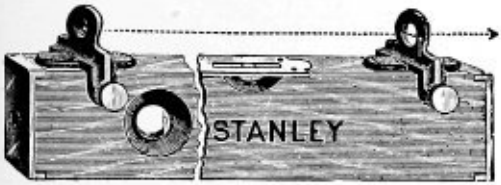
These Plumb Bobs are constructed with a reel at the upper end, upon which the line may be kept; and by dropping the bob with a slight jerk while the ring is held in the hand, any desired length of line may be reeled off. A suitable length of line comes already reeled on each plumb bob.

No. 1. Small, bronze metal, with steel point .....each, $1.50

No. 2. Large, bronze metal, with steel point.....each, 1.75

No. 5. Large iron, with steel point. " 1.00

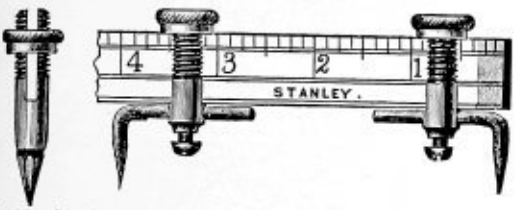
LEVEL SIGHTS



No. 1. Improved, per pair.....$0.75

Can be conveniently attached to any level and is an accurate means for leveling from one point to another at a long distance away.

TRAMMEL POINTS



No. 99. Stanley's rule, in sets of three, per set.....$0.50

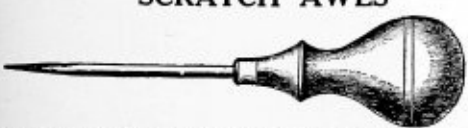
A practical form of trammel points, adapted for convenient use on a carpenters' rule. They can be attached to folding rules of any ordinary width; and on many kinds of work will take the place of regular trammel points, calipers or dividers. A complete set consists of two brass trammel heads, with movable steel points, and one head with a pencil socket.

IMPROVED, WITH PENCIL COMPASS

Used by millwrights, machinists, carpenters, and all mechanics having occasion to strike arcs, or circles, larger than can be conveniently done with ordinary compass dividers. They are made of bronze metal, and have steel points, on either of which a pencil socket (which accompanies each pair) can be firmly clamped close up to the main stock. The pencil will thus be secured at a point nearer the work than is possible by any other method.

No. 1. Small, bronze metal, steel points, per pair.....$1.00
" 2. Medium, " " " " " " 1.25
" 3. Large, " " " " " " 1.75

SCRATCH AWLS



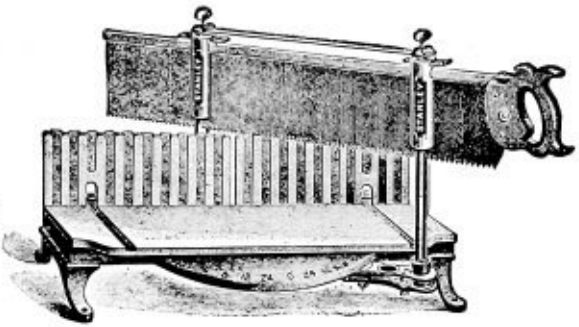
No. 2. Beech handle, brass ferrule, length 6½ in. per dozen.....$0.70

One dozen in a box.

NAIL SETS

No. 10.....per dozen, $1.00

MITRE BOX



No. 246. With 26x4 in. mitre saw, capacity at right angle 8¼ in., capacity at mitre 5½ in.....Each, $11.25
No. 358. With 28x5 in. mitre saw, capacity at right angle 9½ in., capacity at mitre 6½ in.....Each, 13.00

VENEER SCRAPER

No. 12. 8 in. adjustable, 3 in. cutter, rosewood handles,

Each.....$2.25

For scraping and finishing veneers and cabinet work. Also adapted for scraping off old paint and glue.

MORRILL'S "PERFECT" BENCH STOP

No. 1. Square steel spindle.

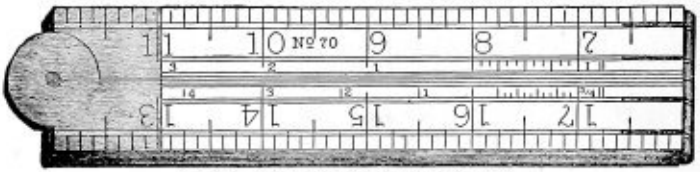
Per dozen.....$9.00

IRON BENCH SCREWS

Wrought Iron Screw, Double Threads
Hardwood Handle

Diameter, in.....	1	1⅛	1⅓
Length, in.....	15	16	17
Per dozen.....	$6.50	7.50	9.00

BOXWOOD RULES



No. 70. Two-foot, Four-fold, Broad

No. 70. Square joint, middle plates, 8ths and 16ths of inch, drafting scale, 1⅜ inches wide, per doz. $4.00

No. 72½ Square joint, bound, 8ths, 10ths, and 16ths of inch, drafting scale, 1⅜ inches wide, per doz. 9.00

TWO-FOOT, FOUR-FOLD

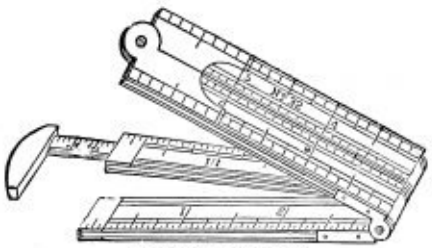
No. 61. Square joint, middle plates, 8ths and 16ths of inch, 1 inch wide..... per doz. 3.00

No. 63. Square joint, edge plates, 8ths, 10ths, 12ths, and 16ths of inch, drafting scale, 1 inch wide..... per doz. 4.00

No. 84. Square joint, half bound, 8ths, 10ths, 12ths, and 16ths of inch, drafting scale, 1 inch wide..... " 6.50

No. 62. Square joint, bound, 8ths, 10ths, 12ths, and 16ths of inch, drafting scale..... " 8.00

CALIPER RULE



One-foot, Four-fold

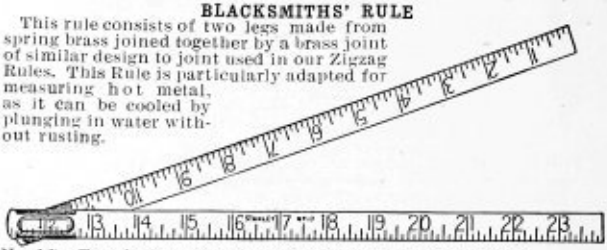
No. 32. Arch joint, edge plates, 8ths, 10ths, 12ths, and 16ths of inch, 1 inch wide..per doz. $7.00

SHIP CARPENTERS' BEVELS

No. 42. Boxwood, double tongue, 8ths and 16ths of inch, doz. $4.00

BLACKSMITHS' RULE

This rule consists of two legs made from spring brass joined together by a brass joint of similar design to joint used in our Zigzag Rules. This Rule is particularly adapted for measuring hot metal, as it can be cooled by plunging in water without rusting.



No. 17. Two-foot, two fold, graduated in 8ths of innches, ¾-inch wide,..... per doz. $9.00

SLIDING T BEVELS

No. 25

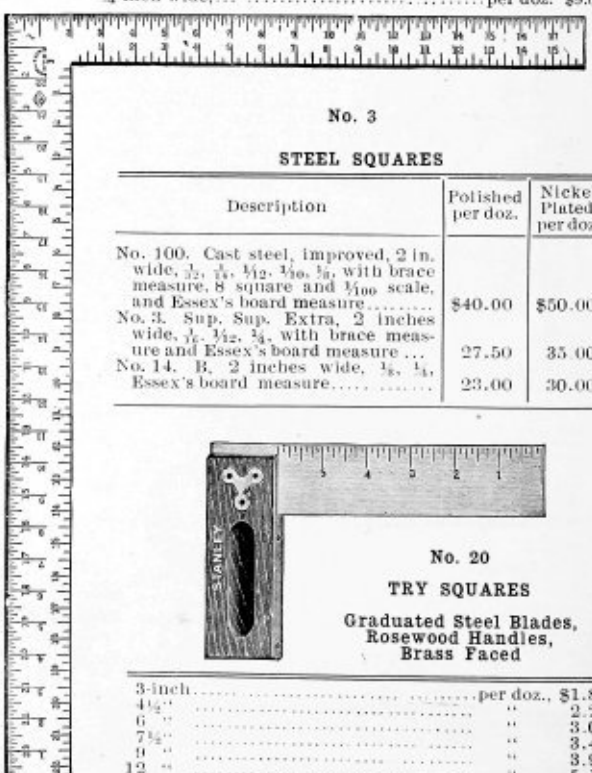
These Bevels have rosewood handles and brass levers (flush).

Size, inches	6	8	10	12
Per dozen	$3.30	$3.60	$3.90	$4.20

ZIGZAG RULES

Graduated 16ths of Inches

Feet	Yellow per dozen	White Enamel per dozen
2	$2.00	$2.50
3	3.00	3.75
4	4.00	5.00
5	5.00	6.25
6	6.00	7.50
8	8.00	10.00



No. 3

STEEL SQUARES

Description	Polished per doz.	Nickel Plated per doz.
No. 100. Cast steel, improved, 2 in. wide, 1/32, 1/16, 1/12, 1/10, 1/8, with brace measure, 8 square and 1/100 scale, and Essex's board measure.....	$40.00	$50.00
No. 3. Sup. Sup. Extra, 2 inches wide, 1/16, 1/12, 1/8, with brace measure and Essex's board measure ...	27.50	35.00
No. 14. B, 2 inches wide, 1/8, 1/4, Essex's board measure.....	23.00	30.00

No. 20

TRY SQUARES

Graduated Steel Blades, Rosewood Handles, Brass Faced

3-inch	per doz.,	$1.80
4½"	"	2.25
6 "	"	3.00
7½"	"	3.45
9 "	"	3.90
12 "	"	5.10

MEASURING TAPES

"RELIABLE" STEEL

With double folding flush handle, opened by pressing on opposite side. Hard leather case. Nickel plated trimmings. Measurements guaranteed perfectly accurate.

With Three-eighth inch Tapes

Marked feet and 12ths (in. and 8ths) No.	Length feet	Diameter of Case inches	Each
200	25	2¾	$4.50
203	50	3⅜	7.20
205	75	4¼	10.40
206	100	4½	12.80
207	150	5¼	18.50
208	200	6	24.00

"RELIABLE"

"CHESTERMAN"

Length feet	Metallic Tape with case each	Metallic Tape only each	Steel Tape with Case each
25	$1.85	$0.90	$4.50
33	2.10	1.30	5.20
50	2.60	1.50	7.20
66	3.00	1.80	9.20
75	3.30	2.00	10.40
100	4.20	2.90	12.80

Divided in tenths and twelfths of a foot.

"CHALLENGE" STEEL

Hard leather cases, nickel plated trimmings, flush handle, marked one side only, in tenths or twelfths.

With Three-eighth inch Tapes

Marked feet and 12ths (in. and 8ths) No.	Length feet	Diameter of case inches	Each
260	25	2¾	$3.25
263	50	3¼	4.00
265	75	4¼	5.25
266	100	4½	6.75

"RIVAL" STEEL MEASURING TAPES

Nickel plated steel cases, flush handle, marked one side only in tenths or twelfths,

With Three-eighth inch Tapes

Marked feet and 12ths (in. and 8ths) No.	Length feet	Diam. of Case inches	Each
240	25	2¾	$2.75
243	50	3¼	3.50
245	75	3¾	4.50
246	100	4¼	5.75

LUFKIN IMPROVED METALLIC

Flush Handle

With patent double folding flush handle, same as we use on our "Reliable" Steel Tapes, opened by pressing pin on opposite side. Tape ⅝ inch wide, made of best woven linen, with metallic warp. Hard leather cases.

Length feet	Marked one Side only 12ths No.	Each
25	600	$2.00
50	603	2.85
75	605	3.50
100	606	4.25

"STERLING" LINEN MEASURING TAPES

With ⅝ inch pure linen tape reinforced with leather; the first four inches and heavily coated. Nickel plated trimmings, flush handle, hard leather cases, marked one side only in tenths or twelfths.

Marked feet and inches No.	Length feet	Per dozen
400	25	$15.00
403	50	20.00
405	75	25.00
406	100	30.00

ASS SKIN MEASURING TAPES

With One-half inch Cotton Tape

Waterproof Coated,

Cases brass bound and sides handsomely cream enameled. Brass folding handles, brass rings and trimmings.

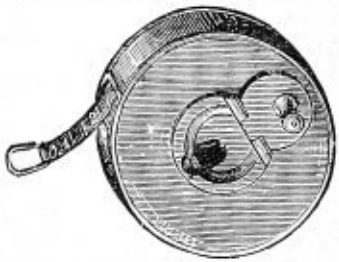
No.	710	711	712	713	714	715	716
Length, feet	25	33	40	50	66	75	100
Per dozen	$3.75	4.00	4.50	5.00	6.00	7.50	9.00

PATENT LEATHER Case

With One-half inch Cotton Tape

Waterproof Coated

Brass folding handles, brass rings and trimmings.



No.	810	811	812	813	814	815	816
Length, feet	25	33	40	50	66	75	100
Per dozen	$4.75	5.00	5.75	6.25	7.25	8.75	10.75

MALLETS AND MAULS

PATENT RAWHIDE MAULS

These are heavy rawhide mauls made of discs of rawhide, compressed and held together by an iron center, with large head and nut, as shown. When the rawhide is worn out new discs can be inserted.

No.	Weight Lbs.	Each	No.	Weight Lbs.	Each
1	3	$1.80	4	8	$2.75
2	4	2.10	5	10	3.00
3	6	2.40	6	12	3.25

These are light mallets, made entirely of hide (except the handle) and suited to a variety of uses.

No.	Diameter inches	Length inches	Weight ounces	Price per doz.
0	1	2 1/8	1 1/2	$3.60
2	1 1/4	2 3/4	3 1/2	4.50
2	1 1/2	3	6	5.40
3	1 3/4	3 1/8	7 1/2	6.25
4	2	3 1/4	10	8.00
5	2 3/4	4 1/4	21	17.75
6	2 3/4	4 3/4	23	22.20

SOLID RUBBER

No.	1	2	3
Weight, lbs.	1 1/2	2	3
Each	$1.25	1.50	2.25

PATENT HIDE FACED

These hammers are invaluable for machinists, workers in brass or silver, jewelry manufacturers, or for any one who needs to strike a hard blow without bruising the material he is at work upon.

Extra faces are sold for these hammers, and when worn out they can be renewed at a slight cost.

No.	Weight Lbs.	Diam. of Face in.	Price per doz.	Extra Faces per doz. Pairs
0	1/2	1	$8.90	$2.75
1	1	1 1/4	10.50	2.90
2	1 1/2	1 1/2	13.30	3.60
3	2	1 3/4	15.90	4.50
4	4	2	23.00	6.25
5	5 1/2	2 3/4	33.00	9.00

No. 0 has a Shell or Casting of Bronze.

SAILMAKERS' MALLETS

HICKORY

Size			Each
4	inch diameter		$0.75
5	"	"	.85
6	"	"	1.00
6 1/2	"	"	1.45
7	"	"	1.75
7 1/2	"	"	2.00
8	"	"	2.25

COPPER HAMMERS

	Weight Lbs.	Each
With Handles	1/2	$0.25
"	1	.40
"	1 1/2	.60
"	2	.80
"	2 1/2	1.00
"	3	1.20
"	4	1.40

Round

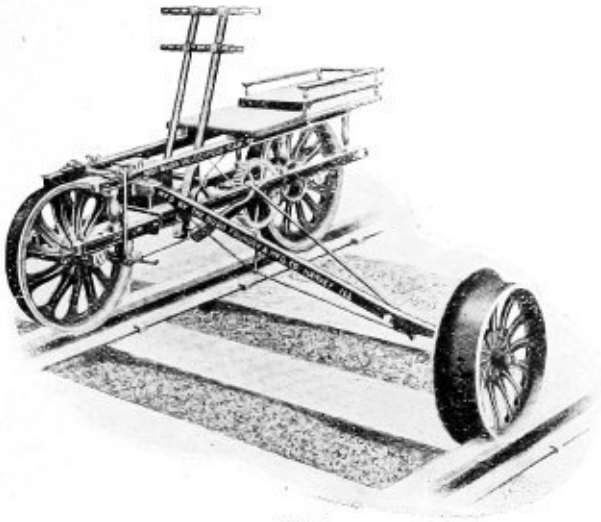
HICKORY AND LIGNUM VITAE

No.		Inches Long	Inches Diam.	Price per doz.
1.	Round hickory, mortised,	5	3	$1.50
2.	" " "	5 1/2	3 1/2	2.00
3.	" " "	6	4	2.50
5.	" lignum vitæ "	5	3	3.00
6.	" " "	5 1/2	3 1/2	4.00
7.	" " "	6	4	5.00
8.	Square hickory, "	6	2 1/2 x 3 1/2	2.00
9.	" " "	6 1/2	2 3/4 x 3 3/4	2.50
10.	" " "	7	3 x 4	3.00
11.	" lignum vitæ "	6	2 1/2 x 3 1/2	3.75
12.	" " "	6 1/2	2 3/4 x 3 3/4	4.75
13.	" " "	7	3 x 4	5.75

Square

VELOCIPEDES

Ball-Bearing



No. 1

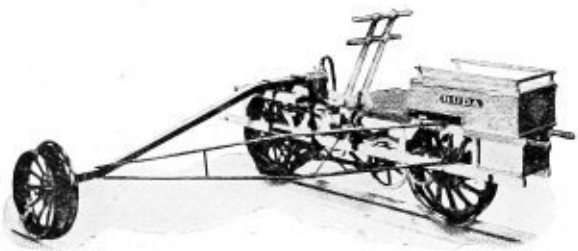
No. 1. Velocipede shown herewith is for one person. Has place for carrying packages, with small railing to retain same.

Ball-bearing; cut gears; 17-inch wheels and a 14-inch guide wheel. For standard gauge unless otherwise ordered. When so specified can furnish it with arm adjustable to any gauge from three to five and one half foot track. No extra charge. Wheels have M. C. B. flange and will not climb track on curves or at switches. Each $35.00

No. 2. For two persons, with side seat, in other respects same as No. 1. Each 36.50

No. 3. For three persons and tray for tools. Has 17-inch forward, 20-inch rear and 14-inch guide wheels. When ordering state gauge. Each $45.00

GASOLINE MOTOR VELOCIPEDE



No. 10

Wheels are M. C. B. Standard. Main axles ball bearing. Car is insulated.

The engine is of 2¼ horse-power and of the most improved type. It is air-cooled, requiring no water jacket, so that it may be used in cold weather without danger of freezing. The speed is variable at the will of operator and may be regulated up to 30 miles an hour. The engine is oiled by an automatic sight feed lubricator.

Gasoline tank is of a capacity to carry car 200 miles.

Operation: In starting, there is no necessity of cranking the engine as in some cars. The operator takes his seat as he would in a hand-propelled car and starts off by using the hand lever. After the car is under way, the engine is started by throwing the electric switch and moving the lever operating the belt tightener. Then the gears are thrown out of mesh by the movement of a lever, and the propelling lever automatically locked. This provides the operator with a firm and rigid lever to grasp and steady himself with.

The switch controlling the ignition is conveniently located on the side of the frame near the right knee of operator, so that in approaching switches or crossings the engine may be instantly shut off for slowing down and immediately started up again by the slightest movement of the hand.

Each $187.50

PUSH CARS

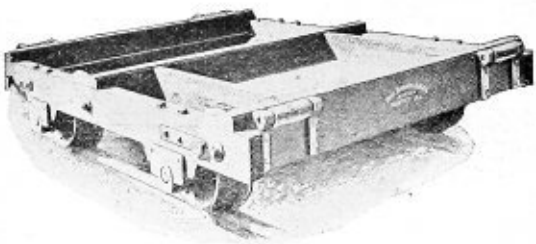
No. 6

No. 6. Standard gauge. Platform 7 feet long by 5 feet 7 inches wide. Steel wheels 20 inches in diameter, machine steel axles 1½ inches in diameter. Weight, 500 lbs.
Each $40.00

No. 6½. Same dimensions as No. 6. Weight, 700 lbs. Extra heavy ..... each, $48.00

EXTRA HEAVY TRACK-LAYING CAR

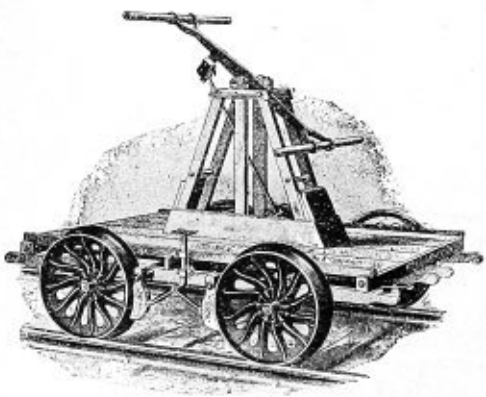
15-TON CAPACITY RAIL CAR



No. 10

No. 10 car, illustrated, is built in an exceedingly substantial manner. Standard gauge. Capacity, 30,000 pounds; weight, 2,000 pounds. In size the car is 8 feet long by 6 feet 6 inches wide; has 4 by 8 inch sills, the cross sills being plated heavily with iron. Large tool box as shown, and four extra size rollers on end sills. The wheels are of chilled cast iron, 16 inches in diameter, with wide tread — extra heavy and strong.
Each $120.00

No. 11. Ten-Ton Track-Laying Car. Well built throughout but is of lighter construction than style No. 10, its weight being about 1,350 pounds; capacity 10 tons. Standard gauge. It is 7 feet 8 inches long by 6 feet 3 inches wide; has chilled cast-iron wheels, 16 inches in diameter, 5½-inch tread. The cross sills are strapped with iron and each end sill provided with two rollers. Car is also supplied with box for tools. Each $100.00



No. 1

HAND CARS

No. 1. Standard gauge. Platform 6 feet long by 4 feet 5 inches wide. Steel wheels 20 inches in diameter, axles 1½ inches in diameter. Weight, 525 lbs.
Each $52.00

No. 2. Standard gauge. Platform 8 feet long by 5 feet 7 inches wide. Steel wheels 20 inches in diameter, axles 1¾ inches in diameter. Weight 740 lbs.
Each $74.00

No. 5

INSPECTION CAR

No. 5 has platform 6 feet long by 4 feet 5 inches wide; steel wheels 20 inches in diameter. Weight, 475 lbs.

Shown in illustration with single end lever; but we furnish it with double end lever if desired. Has hand lever brake in front of seat, to be operated by passengers.
Each $80.00

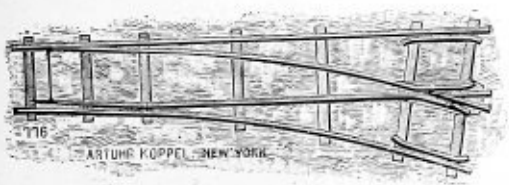
INDUSTRIAL AND PORTABLE RAILWAYS

TRACKS AND SWITCHES

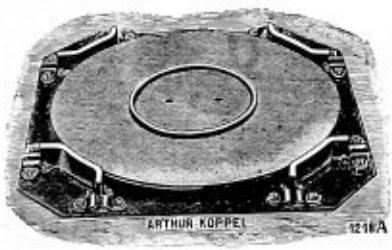
STEEL RAILS
8 to 60 lbs. per Yard

STEEL TIES
7 to 18 lbs. per Yard

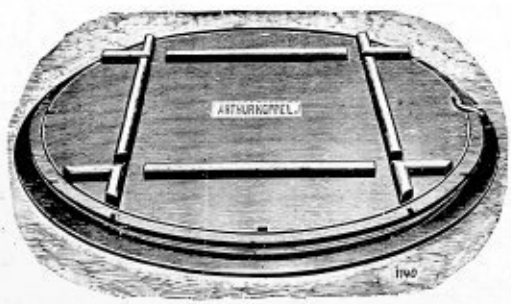
PORTABLE TRACK IN SECTIONS 15 FEET LONG
Mounted on 5 Steel Ties, Made-up Rails 8 to 25 lbs.



PORTABLE SWITCH



CAST IRON TURNTABLE
For Light Weights

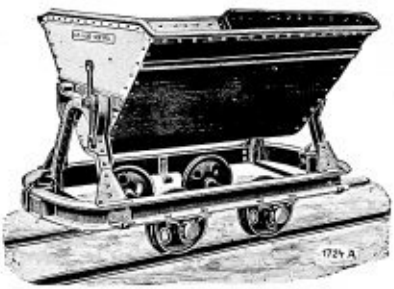


CAST IRON TURNTABLE
Capacity up to 5 Tons

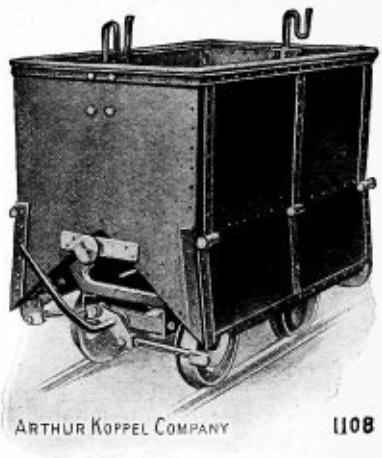
Carrying capacity of portable track is as follows:
9 lb. Rails 1 to 2 tons — 16 lb. Rails 3½ to 5 tons.
12 " " 2 " 3½ " —20 " " 5 " 7 "
These capacities refer to four wheel car, eight wheel car has double capacity. Prices on application.

INDUSTRIAL AND PORTABLE RAILWAYS

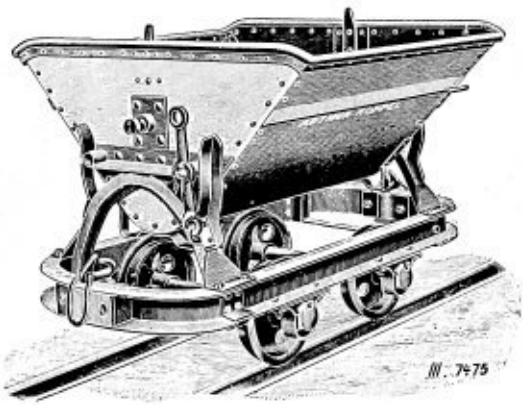
CARS



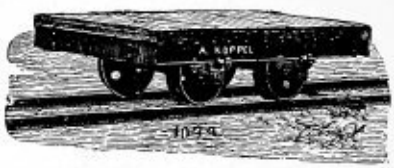
No. 1723
Double Side Wheel Dump Car Cradle Type



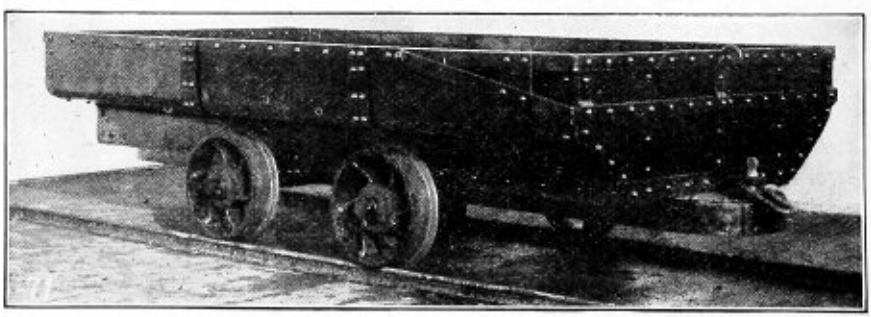
No. 1108 E
Gable or Saddle Bottom Ore Car



No. 7475
Double Side Wheel Dump Car Rocker Type



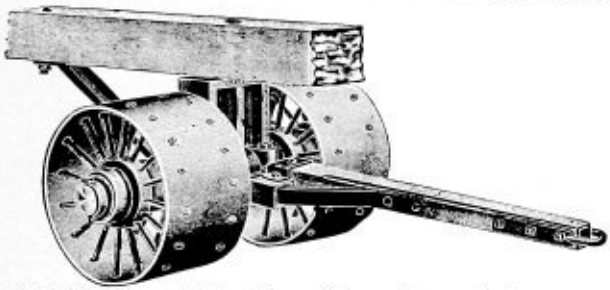
No. 109 A
Platform Car



No. 7691
Steel Coal Mine Car

Prices on application.

ALL-STEEL HOUSE-MOVING TRUCKS



These prices are for one truck only, each truck consisting of two wheels, one round steel axle with bolster attached, and tongue complete with braces and king-bolt.

Height of Wheel inches	Size of Steel Axle inches	With Tire 10 in. Wide and ⅝ in. Thick		With Tire 10 in. Wide and ¾ in. Thick		With Tire 12 in. Wide and ⅝ in. Thick		With Tire 12 in. Wide and ¾ in. Thick		Carrying Capacity per Truck, tons
		Price	Weight pounds	Price	Weight pounds	Price	Weight pounds	Price	Weight pounds	
24 or less	3½	$42.75	949	$44.25	999	$44.75	1015	$46.25	1075	15 to 20
24 or less	4	46.75	994	48.25	1044	48.75	1060	50.25	1120	20 to 25
26	3½	43.75	979	45.25	1037	45.75	1045	47.25	1109	15 to 20
26	4	47.75	1024	49.25	1082	49.75	1090	51.25	1154	20 to 25
28	3½	44.75	1015	46.25	1075	46.75	1085	48.25	1155	15 to 20
28	4	48.75	1060	50.25	1120	50.75	1130	52.25	1200	20 to 25
30	3½	45.75	1055	47.25	1119	47.75	1125	49.25	1195	15 to 20
30	4	49.75	1100	51.25	1164	51.75	1170	53.25	1240	20 to 25

Note.— The truck with wheels 24 in. high, 12x⅝ in. tire and 3½ in. steel axle is the standard.

We also furnish these trucks constructed on the plans as above, only with hickory axles fitted with cast or steel skeins and oak bolster, though we recommend the steel construction. If you do not want the complete truck we can furnish the wheels and axles, or merely the wheels with hub to fit axle you already have.

Our house-moving wheels are a type especially designed for this class of work. The tires and spokes are wrought steel, and the hub a superior grade of cast iron. We furnish these wheels of any height, and any width or thickness of tire.

Below we give the prices of wheels and different parts of the wood and steel trucks, and you can figure the price of complete trucks by adding together the prices of the different parts.

PRICES OF HOUSE-MOVING TRUCK WHEELS

These Prices and Weights are for one Wheel Only.

Height of Wheel inches	With Tire 10 in. Wide and ⅝ in. Thick		With Tire 10 in. Wide and ¾ in. Thick		With Tire 12 in. Wide and ⅝ in. Thick		With Tire 12 in. Wide and ¾ in. Thick		Carrying Capacity of Two Wheels tons
	Price	Weight pounds	Price	Weight pounds	Price	Weight pounds	Price	Weight pounds	
24 or less	$10.00	272	$10.75	297	$11.00	305	$11.75	335	15 to 25
26	10.50	287	11.25	316	11.50	320	12.25	352	15 to 25
28	11.00	305	11.75	335	12.00	340	12.75	375	15 to 25
30	11.50	325	12.25	357	12.50	360	13.25	395	15 to 25

PRICES OF AXLES, BOLSTERS AND TONGUES

	Price Each	Weight pounds	Carrying Capacity per Axle tons		Price Each	Weight pounds	Carrying Capacity per Axle tons
Hickory axles fitted with 5x14 in. cast skein	$8.25	125	10	3½ in. round steel axle	$10.50	140	14
Hickory axles fitted with 5x14 in. steel skein	13.50	120	12	3¾ in. round steel axle	12.00	165	16
3 in. square steel axle	9.50	130	12	4 in. round steel axle	14.50	185	20
3½ " " " "	13.50	180	16	12 ft. tongue with braces	6.00	100	
3¾ " " " "	16.25	210	18	5 ft. " " "	4.50	70	
4 " " " "	18.50	230	22	Iron bolster with fittings	7.00	180	
3 " round " "	7.15	110	11	Wood " " "	5.00	70	

The aboxe axles are from 42 in. to 45 in. long over all. The hickory axles are fitted with the best grade of cast and steel skeins with nuts. Steel axles are made of the best grade of axle steel, have collars shrunk on, and are fitted with cap and pin. The price of bolsters includes fittings, *i. e.*, king-bolt, braces, etc.

PLOWS

No. 6 WESTERN RAILROAD AND TOWNSHIP PLOW

No. 6

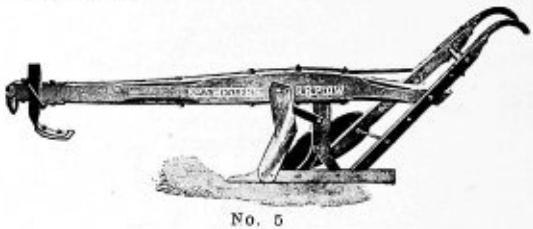
The No. 6 Plow is made for light railroad and township use; is a very strong two-horse plow. The beam is made of specially selected young shellbark hickory, strongly strapped with iron, which extends from the clevis back and down to the standard. Handles are made of second-growth white oak; the handholds are made of round iron; the landside handle is plated with iron on the outside from the landside up to the beam. Share and moldboard are made of best plow steel, and both double shinned. Coulter is made reversible, so that when one end is worn out the other end can be put to use; consequently, it will wear as long as two ordinary coulters. Clevis is of steel, hand made, and is furnished with two wrought iron rings.

We ship right hand plows unless otherwise ordered.

Two-horse, 11-inch cut, with extra Share, weight 100 lbs. $25.00
Additional extra Share for above. 4.00

No. 5 WESTERN RAILROAD PLOW

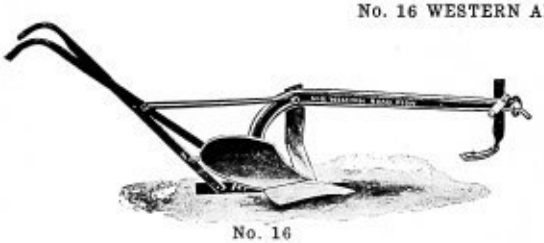
The No. 5 Plow is made for medium railroad work; is the strongest plow of its size ever built. The beam is made of hickory, strongly strapped with iron, which extends from the clevis back and down to the standard. Handles are made of second growth white oak; the handholds are made of round iron and curved, and both are strapped with iron on the outside, which runs full length of the handles. Share and moldboard made of best plow steel, both double shinned. Coulter is reversible, so that when one end is worn out the other end can be put to use; consequently, it will wear as long as two ordinary coulters. Clevis is made of steel, handmade and is furnished with two wrought iron rings.



No. 5

No. 5. Plow. Four horse, 11-inch cut, with extra Share, weight 150 lbs. $25.00
Additional extra Share for above. 5.00

No. 16 WESTERN ALL-STEEL ROAD PLOW



No. 16

No. 16 Road Plow corresponds in size to No. 6; is intended for heavy township and light railroad work. The beam is made of steel. Handles of steel angle bars, strongly braced to beam. Share and moldboard made of best plow steel, and both double shinned. Coulter is reversible, so that when one end is worn out the other end can be put to use; consequently, it will wear as long as two ordinary coulters. Clevis is of steel, hand made. No. 15 All-Steel Plow is built same as above, excepting that it corresponds in size to No. 5 Plow.

No. 16 Plow. Two-horse, 11-inch cut, with extra Share, weight 120 lbs. $27.50
No. 15 Plow. Four-horse, 11-inch cut, with extra Share weight 150 lbs. 32.50
Additional extra Share for No. 16 Plow. 4.00
" " " " " 15 " 5.00

WESTERN ROOTER PLOWS

The Western Rooter is designed for tearing up turnpikes, macadamized streets, cemented walks, hardpan, rock and frost. No other Rooter plow has as long beam and the steel faced shoe.

The points are made of best tool steel and are reversible, as shown in cut, which with the extra point, makes practically four points with each plow. May be taken out and replaced easily. The clamp castings holding the point are entirely separate from the beams and can be replaced at slight cost. No wear whatever comes on the beam, as is the case with some other makes. The plow runs steadily on account of the long beam. Each handle is equipped with a guard to protect it when dragging.

The No. 25 Rooter has wood beam, steel upright and steel cheek plates.

No. 20. Western Rooter with extra point, suitable for four to six horses, 300 lbs. $40.00
Additional extra point, 20 lbs. 5.00
No. 25. Western Rooter with extra point, suitable for twelve horses or traction engine of equal power. 70.00
Additional extra point. 10.00

DRAG SCRAPERS

HASLUP

No.	Capacity Cubic Feet	Weight Pounds	With Runners Each	Without Runners Each
1	7	100	$7.50	$7.25
2	5	90	7.00	6.50
3	3½	80	6.50	6.25

G. B. C. SOLID PRESSED STEEL SCRAPER

G. B. C. Double Bottom Scraper

G. B. C. Solid Pressed Steel with Round Handles

DOUBLE BOTTOM

No.	Capacity Cubic Feet	Weight Pounds	Each
1	7	100	$8.75
2	5	90	8.00

PRESSED STEEL WITH ROUND HANDLES

No.	Capacity Cubic Feet	Weight Pounds	Each
1	7	100	$7.50
2	5	90	6.75
3	3½	80	6.50

For runner, 50 cents additional.

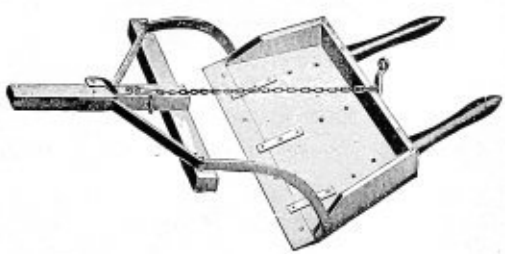
THE COLUMBUS

Made of one Piece Steel

No. 1.	Capacity, 7 cubic feet; weight, 102 pounds	each	$13.00
No. 2.	Capacity, 5 cubic feet; weight, 94 pounds	"	12.00
No. 3.	Capacity, 3 cubic feet; weight, 70 pounds	"	11.00
With runners		extra	.35
With double bottom		"	.50

TONGUE SCRAPER, LEVELER AND DITCHER

This is an excellent scraper for cutting and cleaning ditches and moving large quantities of earth rapidly when the distance is not too great. The drawbars and bit are made of the best quality of steel. It is well ironed and made of well-seasoned hard wood. The driver can fill and dump it with ease.



No.	Width Inches	Weight Pounds	Each
1	48	135	$10.50
2	42	120	10.00

THE DOAN DITCHING SCRAPER

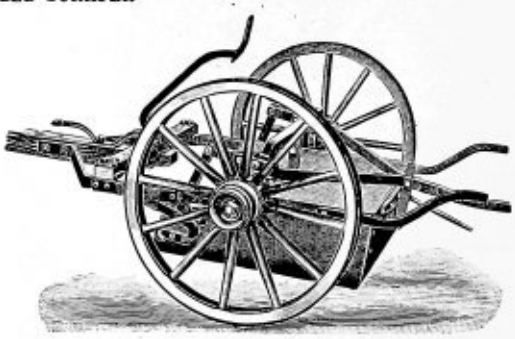
The Doan Scraper is a great favorite among contractors for cleaning out and back filling ditches, and leveling roads and uneven places.

It is well made of seasoned hard wood. The bit is made of special steel, 48 inches long, ¼ inch thick and 7 inches wide, which is 2 inches wider than those usually made. The scrapers are well ironed and bolted, and the hounds are made of 1¾x⅝ inch steel, with ⅜ inch cable chain.

Width 48 inches, wt. 75 lbs..... each, $7.50

WESTERN WHEELED SCRAPERS

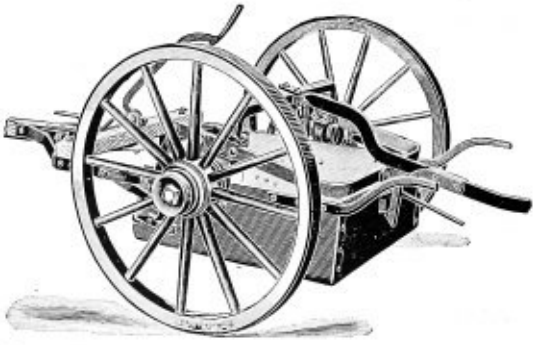
No. 1 WESTERN WHEELED SCRAPER



Wheels are made from selected stock, 36 inches high; tires, 2½x¼ inch; axle, 1⅜ inches square; bowl, 3 feet wide, 3 feet long, 12 inches deep; draft hooks, automatic, patented, prevents the scraper from dumping while being filled, and regulates the cut to even depth.

No. 1 Wheeler. Capacity 9 cubic feet, weight 340 lbs..... each, $45.00
Automatic End Gates for above, extra..... " 5.00
Whiffletrees and neckyokes, extra.

No. 2 WESTERN WHEELED SCRAPER



Wheels made from selected stock, 40 inches high; tires, 3x⅜ inch; axle, 1¾ inches square, arched 3½ inches higher than the old standard Wheelers were; bail is of an entirely new pattern, is bent around on a line with the top edge of the pan and supported by the lever, which is arched (see cut) and extends forward and is firmly attached to the axle, giving abundant clearance for the dirt in filling and dumping; bowl, 3 feet 2 inches wide, 3 feet 1 inch long, 13½ inches deep; draft hooks, patent, automatic, prevents scraper from dumping while being filled, and regulates the cut to even depth.

No. 2 Wheeler. Capacity 12 cubic feet, weight 600 lbs..... each, $50.00
Draft Rods for above, extra..... " 2.00
Automatic End Gates for above, extra..... " 5.00
Whiffletrees and neckyokes, extra.

WHEELBARROWS

TUBULAR STEEL

DIRT

No.	Gauge of Steel Tray	Weight	Capacity	Each
4	15	70 lbs.	3 cubic ft.	$10.75
4½	14	75 "	3 "	11.50
5	14	78 "	4 "	13.50
MINING				
6	14	80 lbs.	3 cubic ft.	$12.25
7	14	87 "	4 "	14.25
FOUNDRY				
8	12	90 lbs.	3 cubic ft.	$14.00
9	12	97 "	4 "	16.00
COAL				
7	14	87 lbs.	215 lbs. coal	$14.25
10	13	109 "	425 "	20.00
COKE				
12	15	93 lbs.	5 bu. coke	$18.50

No.	4	4½	5	6	7	8	9	10	12
Trays, each.	$5	5.50	7.00	5.80	8.00	8.50	9.50	11.00	10.50

Wheels, No. 4 to 6, $1.75: 7 to 9, $1.85; 10 to 12, $2.00

Pan American

Tray 32 x 33 inches. Depth at wheel end 11 inches, at handle end 7½ inches.
With No. 13x Steel Wheel 16 in. diam. per doz . . $48.00

COAL BARROW WITH TWO WHEELS

Made of steel, banded around top, well painted.

These Barrows are easily dumped forward without running back onto the operator. Axles have turned bearings.

No.	Weight Each lbs.	Size of Tray at Top	Diam. of Wheels inches	Gauge of Steel in Box	Capacity in lbs. of Coal	Price Each
D1	175	23x33	16	12	250	$25.00
D2	185	24x35	16	12	350	27.00
D3	220	26x38	18	12	400	30.00
D4	240	27x40	18	12	500	32.00

No. 100

Solid pressed-steel 16 gauge tray. Angle-steel legs and braces. Metal-tipped extension handles. Tray 29 x 36 inches. Cap. 4 cubic feet. Per doz. . $42.75

No. 110

Solid pressed-steel 16 gauge tray. Angle-steel legs and braces. Metal-tipped extension handles. Weight 60 lbs.
Tray 31x33 inches. Cap. 3½ cubic ft. Per doz. . $41.50

No. 115. Concrete Barrow

The best Barrow on the market for soft concrete or mortar.

Deep riveted tray. Angle steel legs and braces.

Metal-tipped extension handles. Weight 70 lbs.
Tray 22½x34 inches. Capacity 4 cubic feet.
Per doz. $51.00

STEEL CHARGING BARROWS

These are made of No. 10 Steel, either with third small wheel or leg, as desired.

No.	Capacity cu. ft.	Long inches	Wide inches	Deep inches	Each
20	10	54	20	21	$50.00
21	12	54	21	25	58.00
22	14	54	24	26	65.00
23	16	56	26	28	70.00
24	20	57	28	30	80.00

WHEELBARROWS

BRONSON No. 4

Wood tray, half bolted, 16 inch wheel.
No. 3. Wood wheels.....per doz., $18.00
" 4. No. 1 steel wheels..... " 19.50

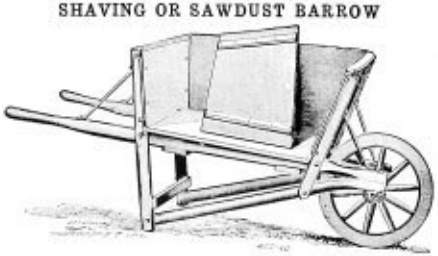
CHAMPION Jr.

Wood tray, full bolted, 16 inch wheel.
No. 14. Wood wheels.....per doz., $21.50
" 15. No. 1 steel wheels..... " 22.75

CHAMPION

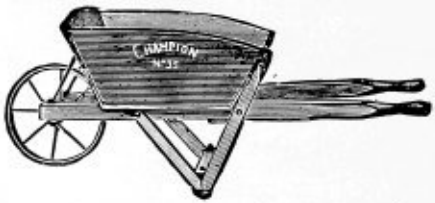
Wood or steel tray, full bolted, 16 inch wheel. Malleable shoe for combining legs and braces.
No. 74. Wood wheel and wood tray..per doz., $21.75
" 75. No. 1, steel wheel and wood tray.....per doz., 24.00
No. 76. No. 1 steel wheel and steel tray, No. 16 gauge.....per doz., 35.00
No. 77. No. 1 steel wheel and steel tray, No. 20 gauge.....per doz., 24.00

SHAVING OR SAWDUST BARROW



Hardwood legs and braces. Bolted and braced.
No. 6. Capacity 6 bushels.....per doz., $9.50
" 7. " 10 " ..... " 10.75

CHAMPION WOOD MORTAR



Edges and corners of tray iron strapped, painted brown.
No. 35. No. 1 steel wheels, top 27½x30 inches, depth at handle, 9 inches, depth at wheel 15 inches.....per doz., $37.50

CHAMPION STEEL MORTAR

No. 37. No. 1 steel wheel, No. 16 steel, capacity 4 cubic feet, Tray 28x30 inches, weight each 50 lbs.....per doz., $51.00

CHAMPION STONE—Iron Strapped, Painted Brown

No. 40. No. 2 steel wheels, bottom 27x28 inches, front 9x28 inches, weight each 65 lbs.....per doz., $51.00

FOLDING STEEL FRAME GARDEN BARROW

This barrow folds up in a space of 5x24x60 inches. Frame is Japanned steel, body and handles wood. Size of bottom, 23 inches wide at handles, 19 inches wide at wheel. Length, 28 inches; depth, 12 inches. Painted solid colors, red, green. Weight, 40 lbs.
No. 20. No. 1 steel wheel.....per doz., $37.00

WHEELS

No. 1. Steel Wheel, staple bolt; diameter, 16 inches; tire, 1½x¼ inch; length hub, 7 inches.....per doz., $9.50
No. 2. Extra heavy steel Wheel; diameter, 16 inches; tire, 2x⅜ inch; length of hub between bearings, 7 inches.....per doz., 16.00
Wood Wheel, diameter, 16 inches; tire, 1¼ inches; length hub, 7 inches.....per doz., 8.00

SHOVELS

D HANDLE, SQUARE POINT

No.		Size	Carpenter per Dozen	Peerless per Doz.	Eclipse per Doz.	Success per Doz.
2	Black	9½x11¾	$14.50	$12.00	$9.50	$8.50
2	Polished	9½x11¾	15.00	12.50	10.00	9.00
3	Black	10¼x12½	15.00	.....	.....	.....
4	"	10⅞x13½	15.50	.....	.....	.....
5	"	11⅜x13½	16.00	.....	.....	.....
6	"	12 x14	16.50	.....	.....	.....

No. 2 Tamping Shovel with malleable handles, $2.00 per dozen advance.

D HANDLE, ROUND POINT

No.		Size	Carpenter per Doz.	Peerless per Doz.	Eclipse per Doz.	Success per Doz.
2	Black	9½x11¾	$14.50	$12.00	$9.50	$8.50
2	Polished	9½x11¾	15.00	12.50	10.00	9.00
3	Black	10¼x12½	15.00	.....	.....	.....
4	"	10⅞x13½	15.50	.....	.....	.....
5	"	11⅜x13½	16.00	.....	.....	.....
6	"	12 x14	16.50	.....	.....	.....

LONG HANDLE, ROUND POINT

No.		Size	Carpenter per Dozen	Peerless per Dozen
2	Black	9¼x12	$14.50	$12.00
2	Polished	9¼x12	15.00	12.50

COAL SHOVELS, BACK STRAP

No.		Size	Carpenter per Dozen	Peerless per Dozen
1	Black	13¼x13¾	$15.00	$12.50
2	"	14¼x14¾	15.50	13.00
3	"	14¾x15	16.00	13.50

Hollow Back List $1.00 per doz. less.

TELEGRAPH SHOVELS

Handles	Carpenter Extra Long Strap per Dozen	Carpenter Regular Strap per Dozen
6 ft. Black	$20.50	$18.50
7 " "	22.50	20.50
8 " "	24.50	22.50

TELEGRAPH SPOONS

	Carpenter
6 ft. Handles, Black...per doz.	$22.00
7 " " " ... "	22.00
8 " " " ... "	24.00

SPADES

CARPENTER'S D HANDLE, SQUARE POINT

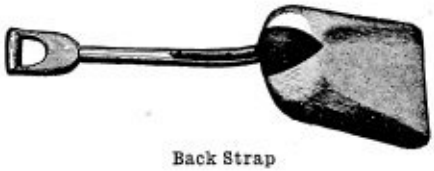
No. 2. Black.....per doz. $14.50
" 2. Polished..... " 15.00

DRAIN AND DITCHING SPADES
Carpenter's

Size, inches.....	14	16	18	20	22
Polished....per doz.	$19.00	19.50	20.00	20.50	21.00

SCOOPS

GRAIN AND COAL



Back Strap

CARPENTER'S

No.	2	3	4	5	6
Size blade, inches	11x15	11¼x15½	11½x16	12x16½	12¼x17
Back Strap, black, doz.	$16.00	16.50	17.00	17.50	18.00
Hollow Back " "	$14.00	14.50	15.00	15.50	16.00

Hollow Back

No.	7	8	9	10
Size blade, inches	13¼x17	13½x17¾	14x17¾	14½x18½
Back Strap, black, doz.	$18.50	19.00	19.50	20.00
Hollow Back, " "	$16.50	17.00	17.50	18.00

Polished, 50c. per dozen advance.

AMES

No.	2	3	4	5	6
Length of blade, inches	15	15½	16	16½	16¾
Width at point, "	11	11½	12	12	12½
Black, per dozen	$13.00	13.25	13.75	14.00	14.50
No.		7	8	9	10
Length of blade, inches		17	17½	18	18½
Width at point, "		13¾	14	14¼	15
Black, per dozen		$15.00	15.50	16.25	17.00

Reinforced back, $1.00 advance. All polished, $0.50 advance. Above are with 26 inch handles. Can furnish Nos. 3 to 8, inclusive, in black with 22 inch handles, same list.

AMES No. 7 REINFORCED COAL SCOOPS

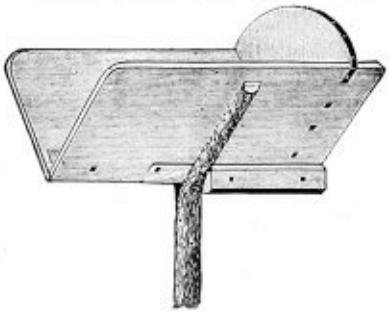
13¾x17 Black, per dozen.....$16.00

HERCULES GRAIN SCOOP

Bushel Scoop, 12½ inches wide, 31 inches long, each.....$3.00
Half bushel Scoop, 10 " " 26½ " " " 2.50

THE "CHAMPION" FLOUR SCOOP

Size inches	Price Each			Size inches	Price Each		
	Tin	Steel	Galvanized Steel		Tin	Steel	Galvanized Steel
8	$0.60	$0.75	$0.85	12	$0.75	$1.00	$1.10
10	.65	.85	1.00	14	1.00	1.25	1.35



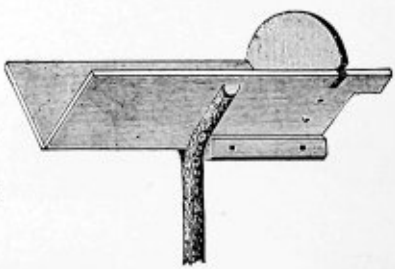
Mortar

HODS

Tin Lined Shoulder Blocks
Rough Hickory Handles

Mortar, weight each 12½ lbs., per dozen.....$12.00

Brick, weight each 7½ lbs., per dozen.....$9.00



Brick

SHOVELS AND FORKS

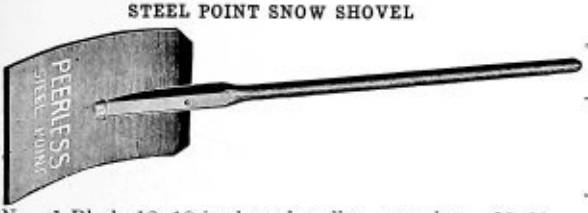
SNOW SHOVELS
One Piece Snow Shovel, Long Handle

12x14 inch blade, weight 55 lbs.....per doz. $5.50

ONE PIECE SNOW SHOVEL, D HANDLE

12x14 inch blade, weight 55 lbs.....per doz. $6.75

STEEL POINT SNOW SHOVEL

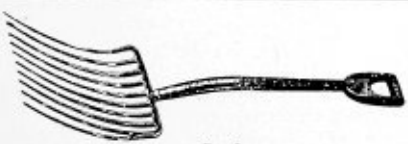


No. 1 Blade 12x18 in. long handle ..per doz. $6.00
" 01 " " " D " .. " 6.50

FORKS

Coke

No. of Tines	Length Tines inches	Distance between, ins.	Per doz.
10	17	1¼	$24.00
12	18	1¼	28.00
12	18	1	28.00
14	19	1¼	33.00
14	17	1	33.00
16	17	1	40.00
16	17	¾	40.00



Coal

No. of Tines	Length Tines inches	Distance between, ins.	Per doz.
8	16	1⅛	$20.00
8	16	1⅛	20.00
9	16	1	22.00
10	16	⅞	25.00
10	16	1	25.00
12	16	1	29.00
12	14	⅝	29.00
14	15½	¾	33.00
14	16½	½	33.00

MORTAR HOES

10 inch blade, solid shank, open blade, per doz. $9.75
10 " " " " solid " " 9.00

HEAVY STONE FORKS
Square Tines

No. of Tines	Width of Fork inches	Per doz.
8	10½	$20.00
10	13	25.00
12	13	29.00
14	13	33.00

STONE HOOKS

4 teeth, 9x8 ins..per doz. $8.75
4 " 9x10 " .. " 12.00

1¾ inches between teeth.

SHAVING FORKS

No. of Tines	Distance between Tines	Per doz.
6	3 inch	$22.00
8	3 "	24.00

STONE RAKES
Extra Heavy, Malleable Iron

16 teeth, 4x20 inches.....per doz. $22.00

SCREENS

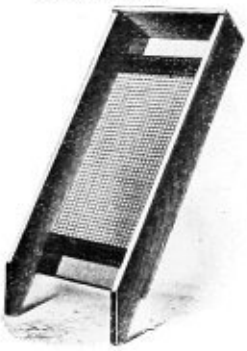
For Screening Coal, Coke, Gravel, etc.

Oak Frame

Plain Screen

No.	Size inches	Weight lbs.	Each	No.	Size inches	Weight lbs.	Price Each
10	34x76	101	$15.00	1	34x81	118	$17.25
20	31x69	86	12.00	2	31x74	106	14.25

Screen with Foot Board and Leg



"CHALLENGE" COAL SCREENS

Oak Frame

Steel Wire—Double Crimped—Japanned

No.	Size inches	Each
22	29x71	$7.50

RIDDLES

Oak Rims, Extra Heavy, For Foundry

PLAIN STEEL WIRE

Diam., in.	Stock No.	Per doz.
16	2, 3, 4, 5, 6, 8, 10, 12	$8.00
18		10.00
20		12.00

BRASS WIRE

16	2, 3, 4, 5, 6, 8, 10, 12	$16.00
18		18.00
20		20.00

SAND SCREEN

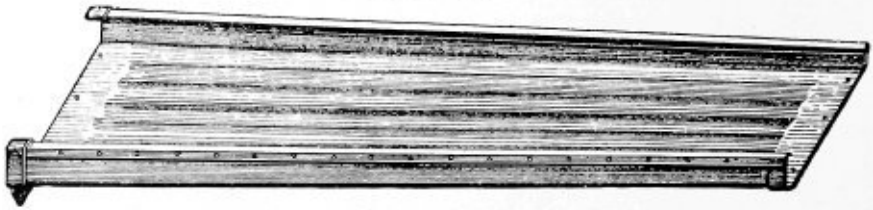
	Size, inches	Weight, lbs.	Each
Small	22x60	35	$6.00
Large	26x66	42	7.50

No small wires are used to wear out quickly, leaving the screening surface loose and uneven. The frames are not weakened by numerous holes bored to receive the ends of the wires. The surface is perfectly even, so that sand is not retarded in its downward course. The wires cannot be displaced to form irregular openings. The screen is constructed so the wear will be borne proportionately on all parts.

Dreudul's Steel Wire, Painted Frame

ANGLE EXTENSION CHUTE

Sackett Pat.



Above represents the Angle Extension Chute. It is adapted to indefinite extension and chutes coal any distance, whether it be fifteen or fifty feet. When not used for extension, each section is an independent chute and may be used for sized coal, lump coal or wood.

Made in 5, 6, 8, 10 and 12 ft. Lengths

Black Iron.....per foot $0.50 Galv. Iron.....per foot $0.60

AETNA DYNAMITE

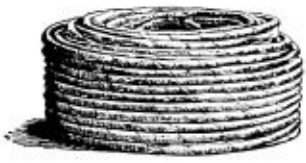
THE STANDARD HIGH EXPLOSIVE

Packed in 25 lb. and 50 lb. cases.
Shipped by freight only.
Made in grades from 15% to 60% of nitroglycerin.
Use 40% for stumps, stone and ordinary work.
Use Aetna Gelatin Dynamite for submarine work.

BLASTING CAPS

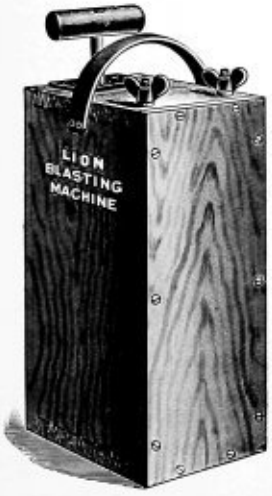
For Exploding Dynamite

Quadruple force.....per 100
Quintuple " ..... "



FUSE

Single tape.....per 1000 feet
Double " ..... " "
Anchor brand ..... " "
Triple Tape..... " "



For firing blasts by electricity

LION BATTERIES

Lion No. 1.	Capacity	8– 10 holes.....	$15.00
" 3.	"	20– 25 "	25.00
" 4.	"	30– 50 "	50.00
" 5.	"	50–100 "	75.00

Caps and lion fuses must be shipped by freight and cannot by shipped with dynamite.

ELECTRICAL FUSES

"Lion Brand"

Double-wound insulation.
Every one warranted perfect.

	Standard Strength per 100	Double Strength per 100
4 feet wire.....	$3.00	$3.75
6 "	3.54	4.29
8 "	4.08	4.83
10 "	4.62	5.37
12 "	5.16	5.91
14 "	5.70	6.45
16 "	6.24	6.99
18 "	6.78	7.53
20 "	7.32	8.07
22 "	8.32	9.07
24 "	9.32	10.07
26 "	10.32	11.07
28 "	11.32	12.07
30 "	12.32	13.07

Sundries

Leading wire, common, 500 feet coil.....	At Market Prices
Aetna cable leading wire, per coil.....	
Connecting wire, 1-lb. coils or 2-lb. spools, per pound.....	
Leading wire reels, each.....	$4.00
Rubber insulating tape, per ½-lb. roll.....	.75
Friction tape, per ½-lb. roll.....	.50

IRON SET SCREWS

Per 100—Adopted April 1, 1905

Diameter of Screw	¼	5/16	⅜	7/16	½	9/16	⅝	¾	⅞	1	1⅛	1¼
Length Under Head to Extreme Point ½	$1.80	$2.00	$2.35	....	....	....	.....	.....	.....	.....	.....	.....
⅝	1.90	2.10	2.45	$2.80	$3.30	.....	.....	.....	.....	.....	.....	.....
¾	2.00	2.20	2.50	2.90	3.40	$5.00	$5.00	.....	.....	.....	.....	.....
⅞	2.10	2.30	2.60	3.00	3.60	5.50	5.50	.....	.....	.....	.....	.....
1	2.15	2.35	2.65	3.10	3.80	5.75	5.75	$10.00	.....	.....	.....	.....
1¼	2.30	2.50	2.85	3.50	4.30	6.50	6.50	11.00	$15.50	.....	.....	.....
1½	2.50	2.70	3.10	4.00	4.80	7.25	7.25	12.00	16.20	$22.00	.....	.....
1¾	2.75	3.00	3.50	4.50	5.40	8.00	8.00	12.80	17.70	24.00	$41.70	.....
2	3.25	3.50	4.00	5.15	6.00	8.80	8.80	13.60	19.20	26.00	45.00	$54.00
2¼	3.75	4.00	4.50	5.75	6.75	9.60	9.60	14.50	20.70	28.00	48.30	58.30
2½	4.25	4.50	5.00	6.35	7.50	10.40	10.40	15.40	22.20	30.00	51.60	62.60
2¾	4.75	5.00	5.50	6.75	8.25	11.20	11.20	16.30	23.70	32.00	54.90	66.90
3	5.25	5.50	6.00	7.20	9.00	12.00	12.00	17.30	25.20	34.00	58.20	71.20
3¼	....	....	....	7.60	9.75	12.75	12.75	18.40	26.70	36.00	61.50	75.50
3½	....	....	....	8.00	10.50	13.50	13.50	19.50	28.20	38.00	64.80	79.80
3¾	....	....	....	8.50	11.25	14.30	14.30	20.75	29.70	40.00	68.10	84.10
4	....	....	....	9.00	12.00	15.10	15.10	22.00	31.20	42.00	71.40	88.40
4¼	....	....	....	....	.....	.....	15.90	23.50	32.70	44.00	74.70	92.70
4½	....	....	....	....	.....	.....	16.70	25.00	34.20	46.00	78.00	97.00
4¾	....	....	....	....	.....	.....	.....	26.50	35.70	48.00	81.30	101.30
5	....	....	....	....	.....	.....	.....	.....	37.20	50.00	84.60	105.60
Threads to inch	20	18	16	14	12	12	11	10	9	8	7	7
Add for each ¼ in.	$0.50	$0.60	$0.70	$0.80	$0.90	$1.10	$1.10	$1.50	$1.70	$2.25	$3.30	$4.30

For list price of steel set screws, add 25 per cent to the above.

CAP SCREWS

HEXAGON HEAD CAP SCREWS

SQUARE HEAD CAP SCREWS

PER 100—Adopted April 1, 1905

Diameter of Head	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/8
Diameter of Screw	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4
Length under Head to Extreme Point 3/4	$3.00	$3.25	$3.75	$4.50	$5.70	.....	.....	.....	.....	.....	.....	.....
7/8	3.15	3.40	3.90	4.70	5.80	.....	.....	.....	.....	.....	.....	.....
1	3.25	3.50	4.00	4.90	5.90	$9.25	$9.25	.....	.....	.....	.....	.....
1 1/4	3.50	3.75	4.25	5.30	6.50	9.50	9.50	$12.50	.....	.....	.....	.....
1 1/2	3.75	4.00	4.50	5.70	7.10	10.00	10.00	13.50	$18.40	.....	.....	.....
1 3/4	4.00	4.25	4.85	6.10	7.70	10.75	10.75	14.50	19.70	$22.75	.....	.....
2	4.25	4.85	5.20	6.50	8.30	11.50	11.50	15.50	21.00	25.00	$34.00	$38.50
2 1/4	4.70	5.35	5.55	7.15	8.90	12.60	12.60	16.50	22.40	27.25	36.75	42.00
2 1/2	5.25	5.80	6.00	7.50	9.50	13.60	13.60	17.50	23.70	29.50	39.50	45.50
2 3/4	5.75	6.30	6.65	7.90	10.10	14.40	14.40	19.00	25.00	31.75	42.25	49.00
3	6.25	6.80	7.20	8.40	10.70	15.20	15.20	20.60	26.40	34.00	45.00	52.50
3 1/4	....	....	....	9.15	11.50	16.00	16.00	22.10	28.20	36.25	47.75	56.00
3 1/2	....	....	....	9.75	12.30	17.30	17.30	23.70	30.00	38.50	50.50	59.50
3 3/4	....	....	....	10.50	13.10	18.60	18.60	25.30	31.80	40.75	53.25	63.00
4	....	....	....	11.10	13.90	19.90	19.90	26.90	33.60	43.00	56.00	66.50
4 1/4	....	....	....	....	.....	.....	21.20	28.50	35.40	45.25	58.75	70.00
4 1/2	....	....	....	....	.....	.....	22.50	30.10	37.20	47.50	61.50	73.50
4 3/4	....	....	....	....	.....	.....	.....	31.70	39.00	49.75	64.25	77.00
5	....	....	....	....	.....	.....	.....	.....	40.80	52.00	67.00	80.50
Threads to inch	20	18	16	14	12	12	11	10	9	8	7	7
Add for each 1/4 inch	$0.40	$0.50	$0.60	$0.70	$0.80	$1.30	$1.30	$1.60	$1.80	$2.25	$2.75	$3.50

MACHINE SCREWS

ROUND, FLAT AND FILLISTER HEAD

Fillister Head

IRON—Per Gross

List of January 1, 1898

Threads to Inch	56	48	32 36 40		30	32		24 30 32		20	24	16 18 20	16	18			14	16		
No.	2	3	4	5	6	7	8	9	10	12	14	16	18	20	22	24	26	28	30
Lengths	$0.25	$0.25	$0.25	$0.29	$0.29			$0.43	$0.43										
	.25	.25	.25	.29	.29	$0.35	$0.35	.46	.46										
	.27	.27	.27	.31	.31	.38	.38	.46	.46	$0.59	$0.74	$0.95							
	.27	.27	.27	.31	.31	.38	.38	.49	.49	.59	.74	.95							
	.29	.29	.29	.33	.33	.41	.41	.49	.49	.59	.74	.95	$1.10	$1.25	$1.45	$1.70			
	.29	.29	.29	.33	.33	.41	.41	.49	.49	.59	.74	.95	01.15	1.35	1.65	1.90			
	.33	.33	.33	.36	.36	.46	.46	.54	.54	.66	.81	1.00	1.15	1.35	1.65	1.90			
		.33	.33	.36	.36	.46	.46	.54	.54	.66	.81	1.00	1.15	1.35	1.65	1.90			
			.37	.42	.42	.52	.52	.63	.63	.74	.88	1.10	1.30	1.55	1.75	2.00	$2.45		
				.48	.48	.60	.60	.72	.72	.85	1.00	1.20	1.40	1.65	1.90	2.20	2.70	$3.30	
					.55	.70	.70	.85	.85	.97	1.15	1.35	1.55	1.80	2.10	2.55	3.10	3.75	$4.50
						.85	.85	1.05	1.05	1.25	1.45	1.65	1.85	2.10	2.50	3.00	3.60	4.35	5.25
						.85	.85	1.05	1.05	1.25	1.45	1.65	1.85	2.10	2.50	3.00	3.60	4.35	5.25
								1.35	1.35	1.60	1.80	2.00	2.20	2.50	3.00	3.60	4.30	5.10	6.00
									1.35	1.60	1.80	2.00	2.20	2.50	3.00	3.60	4.30	5.10	6.00
										1.80	2.05	2.40	2.55	2.90	3.45	4.10	4.85	5.70	6.65
											2.30	2.75	2.90	3.35	3.95	4.65	5.45	6.35	7.35
												3.10	3.25	3.70	4.35	5.00	5.85	6.90	8.00
													3.65	4.15	4.90	5.75	6.70	7.75	8.90
														4.75	5.55	6.45	7.45	8.60	9.85
															6.50	7.45	8.50	9.70	11.00
Diam. About	1/5	3/32	7/64	1/8	5/64 Set.	3/32 full	5/32	11/64	3/16	7/32	1/4	17/64	5/32	3/16	11/32	3/8	25/64	27/64	32/64

BRASS—Per Gross

List of January 1, 1898

Threads per Inch	56	48	32 36 40		30	32		24 30 32		20	24	16 18 20	16	18			14	16		
No.	2	3	4	5	6	7	8	9	10	12	14	16	18	20	22	24	26	28	30
Inches	$0.32	$0.32	$0.32	$0.40	$0.40			$0.86	$0.86										
	.32	.32	.32	.40	.40	$0.58	$0.58	.86	.86										
	.35	.35	.35	.43	.43	.62	.62	.86	.86	$1.00	$1.55	$2.00							
	.35	.35	.35	.43	.43	.62	.62	.95	.95	1.15	1.70	2.10							
	.39	.39	.39	.48	.48	.68	.68	.95	.95	1.15	1.70	2.10	$3.00	$3.60	$4.60	$6.00			
	.39	.39	.39	.48	.48	.68	.68	.95	.95	1.15	1.70	2.10	3.00	3.60	4.60	6.00			
	48	.48	.48	.57	.57	.77	.77	1.05	1.05	1.30	1.90	2.35	3.25	3.90	4.90	6.30			
		.48	.48	.57	.57	.77	.77	1.05	1.05	1.30	1.90	2.35	3.25	3.90	4.90	6.30			
			.60	.70	.70	.90	.90	1.15	1.15	1.50	2.10	2.60	3.50	4.30	5.40	6.70	$8.10		
				.80	.80	1.05	1.05	1.35	1.35	1.80	2.30	2.90	3.75	4.70	5.95	7.40	9.00	$11.25	
1					.90	1.20	1.20	1.55	1.55	2.10	2.60	3.20	4.00	5.20	6.70	8.50	10.60	13.00	$15.75
1 1/8						1.50	1.50	1.90	1.90	2.55	3.10	3.70	4.50	6.00	7.75	9.90	12.45	15.40	18.75
1 1/4							1.50	1.90	1.90	2.55	3.10	3.70	4.50	6.00	7.75	9.90	12.45	15.40	18.75
1 3/8								2.50	2.51	3.00	3.60	4.30	5.00	6.80	8.90	11.55	14.70	18.35	22.50
1 1/2									2.50	3.00	3.60	4.30	5.00	6.80	8.90	11.55	14.70	18.35	22.50
1 5/8										3.50	4.15	5.00	5.50	7.50	9.85	12.70	16.05	20.40	24.25
1 3/4											4.90	5.75	6.50	8.25	10.60	13.55	17.10	21.80	26.00
1 7/8												6.65	7.50	9 25	11.80	14.95	18.70	23.05	28.00
2													9 00	10 50	12.50	15.50	19.80	25.35	30.50
2 1/4														12.00	14.00	17.00	21.80	27.50	33.00
2 1/2															16.00	19.00	24.10	29.70	36.00

SPRING COTTERS

Per Thousand

The length measurements given are from Point to Neck, or under the eye.

1/32 in. Wire—No.13 w. g.

3/32 x 1/2	$3.50
3/32 x 3/4	4.15
3/32 x 1	4.80
3/32 x 1 1/4	5.45
3/32 x 1 1/2	6.10
3/32 x 1 3/4	6.75
3/32 x 2	7.40

1/16 in. Wire—No. 12 w. g.

1/16 x 1/2	$4.00
1/16 x 3/4	4.75
1/16 x 1	5.50
1/16 x 1 1/4	6.25
1/16 x 1 1/2	7.00
1/16 x 1 3/4	7.75
1/16 x 2	8.50

5/64 in. Wire—No. 11 w. g.

5/64 x 1/2	$5.00
5/64 x 3/4	5.85
5/64 x 1	6.70
5/64 x 1 1/4	7.55
5/64 x 1 1/2	8.40
5/64 x 1 3/4	9.25
5/64 x 2	10.10
5/64 x 2 1/4	10.95
5/64 x 2 1/2	11.80

3/32 in. Wire—No. 10 w. g.

3/32 x 1/2	$6.00
3/32 x 3/4	7.00
3/32 x 1	8.00
3/32 x 1 1/4	9.00
3/32 x 1 1/2	10.00
3/32 x 1 3/4	11.00
3/32 x 2	12.00
3/32 x 2 1/4	13.00
3/32 x 2 1/2	14.00

7/64 in. Wire—No. 9 w. g.

7/64 x 1/2	$7.00
7/64 x 3/4	8.15
7/64 x 1	9.30
7/64 x 1 1/4	$10.45
7/64 x 1 1/2	11.60
7/64 x 1 3/4	12.75
7/64 x 2	13.90
7/64 x 2 1/4	15.05
7/64 x 2 1/2	16.20

1/8 in. Wire—No. 8 w. g.

1/8 x 1/2	$8.00
1/8 x 3/4	9.30
1/8 x 1	10.60
1/8 x 1 1/4	11.90
1/8 x 1 1/2	13.20
1/8 x 1 3/4	14.50
1/8 x 2	15.80
1/8 x 2 1/4	17.10
1/8 x 2 1/2	18.40

9/64 in. Wire—No. 7 w. g.

9/64 x 3/4	$11.10
9/64 x 1	12.80
9/64 x 1 1/4	14.50
9/64 x 1 1/2	16.20
9/64 x 1 3/4	17.90
9/64 x 2	19.60
9/64 x 2 1/4	21.30
9/64 x 2 1/2	23.00
9/64 x 2 3/4	24.70
9/64 x 3	26.40

5/32 in. Wire—No. 6 w. g.

5/32 x 3/4	$12.00
5/32 x 1	14.00
5/32 x 1 1/4	16.00
5/32 x 1 1/2	18.00
5/32 x 1 3/4	20.00
5/32 x 2	22.00
5/32 x 2 1/4	24.00
5/32 x 2 1/2	26.00
5/32 x 2 3/4	28.00
5/32 x 3	30.00

11/64 in. Wire—No. 5 w. g.

11/64 x 1	$18.00
11/64 x 1 1/4	$20.80
11/64 x 1 1/2	23.60
11/64 x 1 3/4	26.40
11/64 x 2	29.20
11/64 x 2 1/4	32.00
11/64 x 2 1/2	34.80
11/64 x 2 3/4	37.60
11/64 x 3	40.40

1/4 in. Wire—No. 4 w. g.

1/4 x 1	$20.00
1/4 x 1 1/4	23.50
1/4 x 1 1/2	27.00
1/4 x 1 3/4	30.50
1/4 x 2	34.00
1/4 x 2 1/4	37.50
1/4 x 2 1/2	41.00
1/4 x 2 3/4	44.50
1/4 x 3	48.00
1/4 x 3 1/4	51.50
1/4 x 3 1/2	55.00
1/4 x 3 3/4	58.50
1/4 x 4	62.00

5/16 in. Wire—No. 1 w. g.

5/16 x 1	$32.50
5/16 x 1 1/4	37.50
5/16 x 1 1/2	42.50
5/16 x 1 3/4	47.50
5/16 x 2	52.50
5/16 x 2 1/4	57.50
5/16 x 2 1/2	62.50
5/16 x 2 3/4	67.50
5/16 x 3	72.50
5/16 x 3 1/4	77.50
5/16 x 3 1/2	82.50
5/16 x 3 3/4	87.50
5/16 x 4	92.50

3/8 Inch Wire.

3/8 x 1 1/2	$72.00
3/8 x 1 3/4	79.20
3/8 x 2	86.40
3/8 x 2 1/4	$ 93.60
3/8 x 2 1/2	100.80
3/8 x 2 3/4	108.00
3/8 x 3	115.20
3/8 x 3 1/4	122.40
3/8 x 3 1/2	129.60
3/8 x 3 3/4	136.80
3/8 x 4	144.00

7/16 Inch Wire.

7/16 x 1 3/4	$108.00
7/16 x 2	119.50
7/16 x 2 1/4	131.00
7/16 x 2 1/2	142.50
7/16 x 2 3/4	154.00
7/16 x 3	165.50
7/16 x 3 1/4	177.00
7/16 x 3 1/2	188.50
7/16 x 3 3/4	200.00
7/16 x 4	211.50
7/16 x 5	257.50

1/2 Inch Wire.

1/2 x 2	$148.50
1/2 x 2 1/4	163.50
1/2 x 2 1/2	178.50
1/2 x 2 3/4	193.50
1/2 x 3	208.50
1/2 x 3 1/4	223.50
1/2 x 3 1/2	238.50
1/2 x 3 3/4	253.50
1/2 x 4	268.50
1/2 x 5	328.50
1/2 x 6	388.50

5/8 Inch Wire.

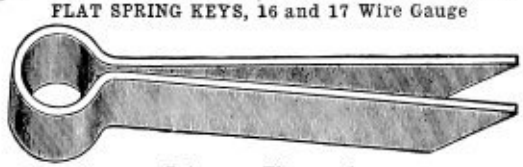
5/8 x 3	$384.00
5/8 x 3 1/4	404.00
5/8 x 3 1/2	424.00
5/8 x 3 3/4	444.00
5/8 x 4	464.00
5/8 x 5	544.00
5/8 x 6	644.00

We do not break packages of Spring Cotters. The following table shows the quantities of cotters of different sizes contained in a package.

1/16 and 5/64 in. dia.	All lengths,	1000 in a box
3/32 in. dia.	1 in. and shorter,	1000 "
"	1 1/4 in. and longer,	500 "
7/64 in. dia.	1 1/4 in. and shorter	1000 "
"	1 1/2 in. and longer,	500 "
1/8, 9/64 in. dia.	1 in. and shorter,	1000 "
" "	1 1/4 in. and longer,	500 "
5/32 in. dia	1 in. and shorter,	1000 "
"	1 1/4, 1 1/2, 1 3/4 in.,	500 "
"	2 in and longer,	250 "
11/64 in. dia.	1 in. and shorter,	1000 "
"	1 1/4, 1 1/2 in.,	500 "
"	1 3/4 in. and longer,	250 "
3/16, 7/32, 13/64 in. dia.	1 1/2 in. and shorter,	500 "
" " "	1 3/4 in. and longer,	250 "
1/4 in. dia.	1 3/8 in. and shorter,	500 "
"	1 1/2 in. and longer,	250 "
5/16 in. dia.	3 in. and shorter,	250 "
"	3 1/4 in. and longer,	100 "

All sizes in 3/8 and larger and Flat Spring Keys packed in bulk.

FLAT SPRING KEYS, 16 and 17 Wire Gauge



Price per Thousand

3/8 x 1 1/4	3/8 in. wide	$39.00	5/8 x 2 1/2	5/8 in. wide	$97.50
3/8 x 1 1/2		44.50	5/8 x 2 3/4		104.00
3/8 x 1 3/4		50.00	5/8 x 3		110.50
3/8 x 2		55.50	5/8 x 3 1/4		117.00
3/8 x 2 1/4		61.00	5/8 x 3 1/2		123.50
3/8 x 2 1/2		66.50	3/4 x 2	3/4 in. wide	104.00
3/8 x 2 3/4		72.00	3/4 x 2 1/4		111.00
3/8 x 3		77.50	3/4 x 2 1/2		118.00
7/16 x 1 1/4	7/16 in. wide	52.00	3/4 x 2 3/4		125.00
7/16 x 1 1/2		58.00	3/4 x 3		132.00
7/16 x 1 3/4		64.00	3/4 x 3 1/4		139.00
7/16 x 2		70.00	3/4 x 3 1/2		146.00
7/16 x 2 1/4		76.00	7/8 x 2	7/8 in. wide	125.00
7/16 x 2 1/2		82.00	7/8 x 2 1/4		131.00
7/16 x 2 3/4		88.00	7/8 x 2 1/2		138.00
7/16 x 3		94.00	7/8 x 2 3/4		147.00
5/8 x 1 3/4	5/8 in. wide	78.00	7/8 x 3		155.00
5/8 x 2		84.50	7/8 x 3 1/4		162.00
5/8 x 2 1/4		91.00	7/8 x 3 1/2		170.00

WOOD SCREWS

Bright, Blued, Japanned, and Galvanized

Flat Head

Round Head

LIST OF JULY 22, 1903. PER GROSS

¼ in.

		No. 0	$0.72
		“ 1	.72
10		“ 2	.72
		“ 3	.72
		“ 4	.72

1¼ in.

		No. 3	$0.88
		“ 4	.92
		“ 5	.98
		“ 6	1.05
		“ 7	1.10
10		“ 8	1.15
		“ 9	1.20
		“ 10	1.30
		“ 11	1.40
		“ 12	1.55
		“ 13	1.70
		“ 14	1.90
	*	“ 15	2.15
		“ 16	2.50
		“ 17	2.75
5		“ 18	3.30
		“ 20	4.00
		“ 22	4.80
		“ 24	5.40

3 in.

		No. 6	$2.95
		“ 7	3.00
		“ 8	3.05
		“ 9	3.10
		“ 10	3.15
		“ 11	3.20
		“ 12	3.30
		“ 13	3.40
1		“ 14	3.50
		“ 15	3.80
		“ 16	4.20
		“ 17	4.80
	*	“ 18	5.50
		“ 20	6.50
½		“ 22	7.50
		“ 24	8.70
		“ 26	10.50

⅜ in.

		No. 0	$0.72
		“ 1	.72
		“ 2	.72
		“ 3	.72
10		“ 4	.72
		“ 5	.75
		“ 6	.78
		“ 7	.82
		“ 8	.88
		“ 9	.94

1½ in.

		No. 3	$0.98
		“ 4	1.05
		“ 5	1.10
		“ 6	1.15
		“ 7	1.20
10		“ 8	1.30
		“ 9	1.35
		“ 10	1.40
		“ 11	1.50
		“ 12	1.65
	*	“ 13	1.80
		“ 14	2.00
		“ 15	2.35
		“ 16	2.80
5		“ 17	3.20
		“ 18	3.80
		“ 20	4.30
		“ 22	5.10
		“ 24	5.90

3½ in.

		No. 8	$3.90
		“ 9	4.00
		“ 10	4.10
		“ 11	4.20
		“ 12	4.30
		“ 13	4.40
		“ 14	4.50
½		“ 15	4.75
		“ 16	4.95
		“ 17	5.40
		“ 18	6.15
		“ 20	7.30
		“ 22	8.70
		“ 24	10.20
		“ 26	12.00

½ in.

		No. 1	$0.72
		“ 2	.72
		“ 3	.72
		“ 4	.75
		“ 5	.78
10		“ 6	.80
		“ 7	.84
		“ 8	.90
		“ 9	.96
		“ 10	1.05
		“ 11	1.10
		“ 12	1.20

1¾ in.

		No. 5	$1.30
		“ 6	1.35
		“ 7	1.45
10		“ 8	1.50
		“ 9	1.55
		“ 10	1.60
	*	“ 11	1.70
		“ 12	1.80
		“ 13	2.00
		“ 14	2.25
		“ 15	2.60
5		“ 16	2.90
		“ 17	3.50
		“ 18	4.00
		“ 20	4.50
		“ 22	5.20
		“ 24	6.00

4 in.

		No. 8	$4.90
		“ 9	5.10
		“ 10	5.20
		“ 11	5.30
		“ 12	5.40
		“ 13	5.60
		“ 14	5.90
		“ 15	6.20
½		“ 16	6.50
		“ 17	7.00
		“ 18	7.60
		“ 20	8.60
		“ 22	9.70
		“ 24	11.20
		“ 26	14.00
		“ 28	16.00
		“ 30	18.50

⅝ in.

		No. 1	$0.72
		“ 2	.72
		“ 3	.72
		“ 4	.75
		“ 5	.78
		“ 6	.82
		“ 7	.86
10		“ 8	.92
		“ 9	.98
		“ 10	1.07
		“ 11	1.12
		“ 12	1.20
		“ 13	1.25
		“ 14	1.30

2 in.

		No. 5	$1.45
		“ 6	1.50
		“ 7	1.55
		“ 8	1.60
		“ 9	1.65
		“ 10	1.75
5		“ 11	1.85
		“ 12	2.00
		“ 13	2.20
		“ 14	2.45
		“ 15	2.75
		“ 16	3.10
		“ 17	3.70
	*	“ 18	4.20
		“ 20	4.80
1		“ 22	5.50
		“ 24	6.40

4½ in.

		No. 12	$7.00
		“ 13	7.20
		“ 14	7.60
		“ 15	7.85
		“ 16	8.15
		“ 17	8.60
½		“ 18	9.15
		“ 20	9.85
		“ 22	11.20
		“ 24	13.50
		“ 26	16.00
		“ 28	18.50
		“ 30	21.50

¾ in.

		No. 2	$0.72
		“ 3	.75
		“ 4	.78
		“ 5	.82
		“ 6	.85
		“ 7	.90
10		“ 8	.95
		“ 9	1.00
		“ 10	1.10
		“ 11	1.15
		“ 12	1.25
		“ 13	1.35
		“ 14	1.50
		“ 15	1.65
		“ 16	1.80

2¼ in.

		No. 5	$1.55
		“ 6	1.60
		“ 7	1.65
		“ 8	1.75
		“ 9	1.85
		“ 10	1.95
5		“ 11	2.05
		“ 12	2.20
		“ 13	2.35
		“ 14	2.65
		“ 15	3.10
		“ 16	3.50
	*	“ 17	3.85
		“ 18	4.55
1		“ 20	5.30
		“ 22	6.10
		“ 24	6.90

5 in.

		No. 12	$8.10
		“ 13	8.30
		“ 14	8.60
		“ 15	9.10
		“ 16	9.70
		“ 17	10.10
½		“ 18	11.00
		“ 20	11.50
		“ 22	13.00
		“ 24	15.00
		“ 26	18.00
		“ 28	21.00
		“ 30	24.00

⅞ in.

		No. 2	$0.74
		“ 3	.78
		“ 4	.82
		“ 5	.85
		“ 6	.90
		“ 7	.94
		“ 8	1.00
10		“ 9	1.05
		“ 10	1.15
		“ 11	1.25
		“ 12	1.35
		“ 13	1.45
		“ 14	1.55
		“ 15	1.75
		“ 16	2.00

2½ in.

		No. 5	$1.90
		“ 6	2.00
		“ 7	2.10
		“ 8	2.20
5		“ 9	2.30
		“ 10	2.40
		“ 11	2.50
		“ 12	2.60
		“ 13	2.70
		“ 14	2.90
	*	“ 15	3.30
		“ 16	3.65
		“ 17	4.20
		“ 18	4.70
1		“ 20	5.80
		“ 22	6.80
		“ 24	7.50

6 in.

		No. 12	$10.00
		“ 13	10.30
		“ 14	11.00
		“ 15	11.60
		“ 16	12.40
½		“ 17	13.00
		“ 18	14.50
		“ 20	16.00
		“ 22	18.00
		“ 24	20.00
		“ 26	23.00
		“ 28	27.00
		“ 30	30.50

1 in.

		No. 3	$0.80
		“ 4	.84
		“ 5	.87
		“ 6	.92
		“ 7	.98
		“ 8	1.05
		“ 9	1.10
		“ 10	1.20
10		“ 11	1.30
		“ 12	1.40
		“ 13	1.60
		“ 14	1 70
		“ 15	2.00
		“ 16	2.50
	*	“ 17	2.70
5		“ 18	2.80
		“ 20	3.50

2¾ in.

		No. 6	$2.40
		“ 7	2.60
		“ 8	2.70
		“ 9	2.80
		“ 10	2.90
		“ 11	3.00
		“ 12	3.10
1		“ 13	3.20
		“ 14	3.30
		“ 15	3.60
		“ 16	3.90
		“ 17	4.50
		“ 18	5.00
		“ 20	6.10
	*	“ 22	7.20
½		“ 24	8.50

*The number of Gross in a bundle is indicated by black figures on the side divided by a star (*).

The following varieties of Iron Screws are invoiced from this list at varying discounts: Flat, Round, Piano, Fillister, and Oval Head Screws, Dowel and Felloe Screws, Bright, Blued, Brassed, Bronzed, Japanned, Lacquered, and Tinned, also Drive Screws.

BRASS WOOD SCREWS

Flat Head

Round Head

LIST OF JULY 22, 1903

Per Gross

¼ Inch		⅜ Inch		½ Inch		⅝ Inch		¾ Inch		⅞ Inch		1 Inch	
No.		No.		No.		No.		No.		No.		No.	
0	$0.84	**0**	$0.84	1	$0.92	1	$0.96	2	$1.12	2	$1.40	3	$1.65
1	.84	1	.87	2	.96	2	1.00	3	1.18	3	1.50	4	1.70
2	.88	2	.92	3	1.02	3	1.08	4	1.25	4	1.55	5	1.75
3	.92	3	.97	4	1.08	4	1.15	5	1.40	5	1.60	6	1.80
4	.97	4	1.04	5	1.20	5	1.30	6	1.55	6	1.65	7	2.10
5	1.04	5	1.12	6	1.30	6	1.40	7	1.75	7	1.90	8	2.45
		6	1.20	7	1.45	7	1.60	8	2.00	8	2.20	9	2.80
		7	1.35	8	1.65	8	1.85	9	2.30	9	2.50	10	3.15
		8	1.50	9	1.90	9	2.10	10	2.65	10	2.90	11	3.65
				10	2.15	10	2.40	11	3.00	11	3.35	12	4.10
						11	2.65	12	3.35	12	3.70	13	4.55
						12	3.00	13	3.70	13	4.10	14	5.05
						13	3.35	14	4.10	14	4.55	15	5.60
						14	3.70	15	4.55	15	5.05	16	6.65
						15	4.10	16	5.05	16	5.60	17	....
						16	4.55					18	7.40

1¼ Inch		1½ Inch		1¾ Inch		2 Inch		2¼ Inch		2½ Inch		2¾ Inch	
No.		No.		No.		No.		No.		No.		No.	
3	$2.10	4	$2.95	6	$3.95	6	$5.15	8	$6.85	9	$9.40	9	$11.50
4	2.20	5	3.05	7	4.00	7	5.20	9	6.95	10	9.50	10	11.65
5	2.25	6	3.10	8	4.10	8	5.25	10	7.05	11	9.60	11	11.80
6	2.35	7	3.20	9	4.20	9	5.30	11	7.25	12	9.70	12	11.95
7	2.45	8	3.30	10	4.70	10	5.40	12	7.90	13	9.85	13	12.10
8	2.85	9	3.65	11	5.35	11	6.15	13	8.80	14	10.75	14	12.25
9	3.20	10	4.25	12	6.05	12	6.85	14	9.80	15	11.85	15	13.00
10	3.50	11	4.65	13	6.70	13	7.55	15	10.75	16	13.00	16	14.20
11	4.10	12	5.35	14	7.35	14	8.45	16	11.90	17	14.30	17	15.65
12	4.65	13	5.95	15	8.65	15	9.75	17	13.00	18	16.95	18	18.40
13	5.35	14	6.65	16	9.50	16	10.70	18	15.40	20	19.85	20	21.60
14	5.85	15	7.60	17	10.45	17	11.70	20	18.00	22	23.00	22	25.00
15	6.55	16	8.35	18	12.40	18	13.90	22	20.95	24	25.50	24	28.00
16	7.20	17	9.15	20	14.50	20	16.30	24	23.30				
17	7.85	18	10.85	22	16.85	22	18.90						
18	9.35	20	12.65	24	18.90	24	21.00						
20	10.45	22	14.50										

3 Inch		3½ Inch		4 Inch		4½ Inch		5 Inch		6 Inch	
No.		No.		No.		No.		No.		No.	
10	$13.70	10	$15.85	12	$18.60	14	$22.60	16	$26.90	16	$31.00
11	13.85	11	16.00	13	18.80	15	22.80	17	29.60	17	34.05
12	14.00	12	16.15	14	19.00	16	23.40	18	35.50	18	40.80
13	14.10	13	16.30	15	19.25	17	25.75	20	40.70	20	46.80
14	14.30	14	16.45	16	20.35	18	30.90	22	47.60	22	54.75
15	14.60	15	16.60	17	22.30	20	35.40	24	53.80	24	61.90
16	15.40	16	17.70	18	26.90	22	41.40	26	62.60	26	72.95
17	16.80	17	19.40	20	30.80	24	46.80	28	72.15	28	82.95
18	19.95	18	22.75	22	36.00	26	54.40	30	82.95	30	93.35
20	23.40	20	26.90	24	40.70	28	62.70				
22	27.10	22	31.20	26	47.35	30	72.15				
24	31.15	24	35.80	28	54.55						
26	35.85	26	41.20	30	62.70						
28	41.15	28	47.45								
30	47.45	30	54.55								

COACH AND LAG SCREWS

GIMLET POINT COACH SCREW

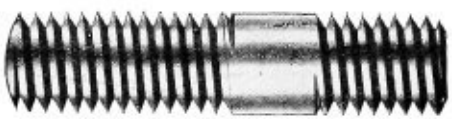
November 1908

PRICE PER 100

Length inches	Diam. $\frac{1}{4}$ inch	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{7}{16}$ and $\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	1
$1\frac{1}{2}$	$2.25	$2.70	$3.15	$3.75	.....	.....	.....	.....
2	2.45	2.96	3.47	4.11	$6.00	.....	.....	.....
$2\frac{1}{2}$	2.65	3.22	3.79	4.47	6.50	$9.20	.....	.....
3	2.85	3.48	4.11	4.83	7.00	9.90	15.00	.....
$3\frac{1}{2}$	3.05	3.74	4.43	5.19	7.50	10.60	16.00	$22.00
4	3.25	4.00	4.75	5.55	8.00	11.30	17.00	23.30
$4\frac{1}{2}$	3.45	4.26	5.07	5.91	8.50	12.00	18.00	24.60
5	3.65	4.52	5.39	6.27	9.00	12.70	19.00	25.90
$5\frac{1}{2}$	3.85	4.78	5.71	6.63	9.50	13.40	20.00	27.20
6	4.05	5.04	6.03	6.99	10.00	14.10	21.00	28.50
$6\frac{1}{2}$	....	....	6.35	7.35	10.50	14.80	22.00	29.80
7	....	....	6.67	7.71	11.00	15.50	23.00	31.10
$7\frac{1}{2}$	....	....	6.99	8.07	11.50	16.20	24.00	32.40
8	....	....	7.31	8.43	12.00	16.90	25.00	33.70
9	....	....	7.95	9.15	13.00	17.30	27.00	36.30
10	....	....	....	9.87	14.00	19.70	29.00	38.90
11	....	....	....	10.59	15.00	21.10	31.00	41.50
12	....	....	....	11.31	16.00	22.50	33.00	44.10

The following extras are to be understood as a part of the Coach and Lag Screw List:
Hexagon and Tee Heads, 10 per cent extra.

STUDS OR STUD BOLTS



MILLED IRON STUDS

PRICE PER 100

	Diam. $\frac{3}{8}$ inch	$\frac{7}{16}$	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1	$1\frac{1}{8}$	$1\frac{1}{4}$
Length of Studs	$1\frac{1}{4}$	$3.35	$4.05	$4.40	$5.10	.....	.....	.....	.....	.....	.....
	$1\frac{1}{2}$	3.50	4.20	4.60	5.30	$6.10	.....	.....	.....	.....	.....
	$1\frac{3}{4}$	3.65	4.35	4.80	5.50	6.30	.....	.....	.....	.....	.....
	2	3.80	4.50	5.00	5.70	6.50	$8.80	.....	.....	.....	.....
	$2\frac{1}{4}$	3.95	4.65	5.20	5.90	6.70	9.10	.....	.....	.....	.....
	$2\frac{1}{2}$	4.10	4.80	5.40	6.10	6.90	9.40	$12.00	.....	.....	.....
	$2\frac{3}{4}$	4.25	4.95	5.60	6.30	7.10	9.70	12.50	.....	.....	.....
	3	4.40	5.10	5.80	6.50	7.30	10.00	13.00	$17.00	$21.00	.....
	$3\frac{1}{4}$	....	5.25	6.00	6.70	7.50	10.30	13.50	17.75	22.00	.....
	$3\frac{1}{2}$	....	5.40	6.20	6.90	7.70	10.60	14.00	18.50	23.00	$27.00
	$3\frac{3}{4}$	....	5.55	6.40	7.10	7.90	10.90	14.50	19.25	24.00	28.00
	4	....	....	6.60	7.30	8.10	11.20	15.00	20.00	25.00	29.00
Thds to inch.		16	14	12	12	11	10	9	8	7	7
Add for ea. $\frac{1}{4}$ in.		$0.15	$0.20	$0.20	$0.20	$0.25	$0.30	$0.40	$0.60	$0.75	$1.00

The tap end of Stud Bolt fits more tightly than Nut End. Give length of parts when ordering.

MACHINE BOLTS

With Square Heads, Square Nuts and Finished Points

Adopted September 20, 1899, to take effect October 1, 1899.

Per 100

Length inches	¼	5/16	⅜	7/16	½	⅝ and ⅝	¾	⅞	1
1½	$1.70	$2.00	$2.40	$2.80	$3.60	$5.20	$7.20	$10.50	$15.10
2	1.78	2.12	2.56	3.00	3.86	5.58	7.70	11.20	16.00
2½	1.86	2.24	2.72	3.20	4.12	5.96	8.20	11.90	16.90
3	1.94	2.36	2.88	3.40	4.38	6.34	8.70	12.60	17.80
3½	2.02	2.48	3.04	3.60	4.64	6.72	9.20	13.30	18.70
4	2.10	2.60	3.20	3.80	4.90	7.10	9.70	14.00	19.60
4½	2.18	2.72	3.36	4.00	5.16	7.48	10.20	14.70	20.50
5	2.26	2.84	3.52	4.20	5.42	7.86	10.70	15.40	21.40
5½	2.34	2.96	3.68	4.40	5.68	8.24	11.20	16.10	22.30
6	2.42	3.08	3.84	4.60	5.94	8.62	11.70	16.80	23.20
6½	2.50	3.20	4.00	4.80	6.20	9.00	12.20	17.50	24.10
7	2.58	3.32	4.16	5.00	6.46	9.38	12.70	18.20	25.00
7½	2.66	3.44	4.32	5.20	6.72	9.76	13.20	18.90	25.90
8	2.74	3.56	4.48	5.40	6.98	10.14	13.70	19.60	26.80
9	2.90	3.80	4.80	5.80	7.50	10.90	14.70	21.00	28.60
10	3.06	4.04	5.12	6.20	8.02	11.66	15.70	22.40	30.40
11	3.22	4.28	5.44	6.60	8.54	12.42	16.70	23.80	32.20
12	3.38	4.52	5.76	7.00	9.06	13.18	17.70	25.20	34.00
13	....	....	6.08	7.40	9.58	13.94	18.70	26.60	35.80
14	....	....	6.40	7.80	10.10	14.70	19.70	28.00	37.60
15	....	....	6.72	8.20	10.62	15.46	20.70	29.40	39.40
16	....	....	7.04	8.60	11.14	16.22	21.70	30.80	41.20
17	....	....	....	....	11.66	16.98	22.70	32.20	43.00
18	....	....	....	....	12.18	17.74	23.70	33.60	44.80
19	....	....	....	....	12.70	18.50	24.70	35.00	46.60
20	....	....	....	....	13.22	19.26	25.70	36.40	48.40
21	....	....	....	....	....	.....	26.70	37.80	50.20
22	....	....	....	....	....	.....	27.70	39.20	52.00
23	....	....	....	....	....	.....	28.70	40.60	53.80
24	....	....	....	....	....	.....	29.70	42.00	55.60
25	....	....	....	....	....	.....	30.70	43.40	57.40
26	....	....	....	....	....	.....	31.70	44.80	59.20
27	....	....	....	....	....	.....	32.70	46.20	61.00
28	....	....	....	....	....	.....	33.70	47.60	62.80
29	....	....	....	....	....	.....	34.70	49.00	64.60
30	....	....	....	....	....	.....	35.70	50.40	66.40

The following extras are to be understood as a part of the Machine Bolt List:

Bolts with Hexagon Heads or Hexagon Nuts 10 per cent extra.

If both Hexagon Heads and Hexagon Nuts, 20 per cent extra.

Joint Bolts with Oblong Nuts, Bolts with Tee Heads, Askew Heads, and Eccentric Heads, 10 per cent extra.

Special Bolts with irregular Threads and unusual dimensions of Heads or Nuts will be charged extra at the discretion of the manufacturer.

COMMON CARRIAGE BOLTS

With Short Full Size Square under Heads, Forged Nuts and Finished Points

Manufacturers' Standard List, adopted May 19th, 1908, to take effect June 1st, 1908.

PER 100

Length inches	Diameter ⅜ and ⅞ inch	Diameter ⅞ inch	Diameter ⅝ inch	Diameter ¾ inch	Diameter ½ inch	Diameter ⅞ and ⅝ inch	Diameter ¾ inch
1	$1.00	$1.40	$1.90	$2.20	.....	.....	.....
1¼	1.00	1.40	1.90	2.20	.....	.....	.....
1½	1.00	1.40	1.90	2.20	$3.00	$5.20	$7.20
1¾	1.04	1.46	1.98	2.29	3.00	5.20	7.20
2	1.08	1.52	2.06	2.38	3.00	5.20	7.20
2¼	1.12	1.58	2.14	2.47	3.00	5.20	7.20
2½	1.16	1.64	2.22	2.56	3.00	5.20	7.20
2¾	1.20	1.70	2.30	2.65	3.11	5.37	7.43
3	1.24	1.76	2.38	2.74	3.22	5.54	7.66
3¼	1.28	1.82	2.46	2.83	3.33	5.71	7.89
3½	1.32	1.88	2.54	2.92	3.44	5.88	8.12
3¾	1.36	1.94	2.62	3.01	3.55	6.05	8.35
4	1.40	2.00	2.70	3.10	3.66	6.22	8.58
4¼	1.44	2.06	2.78	3.19	3.77	6.39	8.81
4½	1.48	2.12	2.86	3.28	3.88	6.56	9.04
4¾	1.52	2.18	2.94	3.37	3.99	6.73	9.27
5	1.56	2.24	3.02	3.46	4.10	6.90	9.50
5½	1.64	2.36	3.18	3.64	4.32	7.24	9.96
6	1.72	2.48	3.34	3.82	4.54	7.58	10.42
6½	1.80	2.60	3.50	4.00	4.76	7.92	10.88
7	1.88	2.72	3.66	4.18	4.98	8.26	11.34
7½	1.96	2.84	3.82	4.36	5.20	8.60	11.80
8	2.04	2.96	3.98	4.54	5.42	8.94	12.26
8½	2.12	3.08	4.14	4.72	5.64	9.28	12.72
9	2.20	3.20	4.30	4.90	5.86	9.62	13.18
9½	2.28	3.32	4.46	5.08	6.08	9.96	13.64
10	2.36	3.44	4.62	5.26	6.30	10.30	14.10
10½	2.44	3.56	4.78	5.44	6.52	10.64	14.56
11	2.52	3.68	4.94	5.62	6.74	10.98	15.02
11½	2.60	3.80	5.10	5.80	6.96	11.32	15.48
12	2.68	3.92	5.26	5.98	7.18	11.66	15.94
13	2.84	4.16	5.58	6.34	7.62	12.34	16.86
14	3.00	4.40	5.90	6.70	8.06	13.02	17.78
15	3.16	4.64	6.22	7.06	8.50	13.70	18.70
16	3.32	4.88	6.54	7.42	8.94	14.38	19.62
17	3.48	5.12	6.86	7.78	9.38	15.06	20.54
18	3.64	5.36	7.18	8.14	9.82	15.74	21.46
19	3.80	5.60	7.50	8.50	10.26	16.42	22.38
20	3.96	5.84	7.82	8.86	10.70	17.10	23.30

BOLT ENDS

Fitted with Square Nuts

February 14, 1895

Size of Iron inches	Length inches	Price per lb.	Size of Iron inches	Length inches	Price per lb.
3/16	6 and 8	$0.32	1 1/4	14	$0.11
1/4	6 " 8	.25	1 3/8	15	.11
5/16	6 " 8	.20	1 1/2	16	.11
3/8	7 " 10	.18	1 5/8	17	.12
7/16	7 " 10	.16	1 3/4	18	.12
1/2 and 9/16	8 " 12	.14	1 7/8	19	.12
5/8	9 " 12	.12	2	20	.12
3/4	10 " 12	.10	2 1/4	22	.14
7/8	11 " 12	.10	2 1/2	24	.14
1	12	.10	2 3/4	24	.16
1 1/8	13	.10	3	26	.18

With Hexagon Nuts, 10 per cent extra.

Bolt Ends ordered shorter than above Standard lengths, in lots of 100 and over, will be charged at the price per hundred of Machine Bolts of same length, subject to same discount; in smaller lot extra. Only the larger sizes enumerated are kept in stock.

UNION TIRE BOLTS

With Forged Nuts

Revised List of December 28, 1899

Price per 100

Length inches	Diam. 5/16 inch	Diam. 1/4 inch	Diam. 7/16 inch	Diam. 5/8 inch	Length inches	Diam. 7/16 inch	Diam. 1/4 inch	Diam. 7/16 inch	Diam. 5/8 inch
1	$0.60	$0.95	$1.40	$2.20	3 3/4	$1.05	$1.40	$1.96	$2.90
1 1/4	.60	.95	1.40	2.20	4	1.10	1.45	2.03	3.00
1 1/2	.60	.95	1.40	2.20	4 1/4	....	1.50	2.10	3.10
1 3/4	.65	1.00	1.40	2.20	4 1/2	....	1.55	2.17	3.20
2	.70	1.05	1.47	2.20	4 3/4	....	1.60	2.24	3.30
2 1/4	.75	1.10	1.54	2.30	5	....	1.65	2.31	3.40
2 1/2	.80	1.15	1.61	2.40	5 1/4	....	....	2.38	3.50
2 3/4	.85	1.20	1.68	2.50	5 1/2	....	....	2.45	3.60
3	.90	1.25	1.75	2.60	5 3/4	....	....	2.52	3.70
3 1/4	.95	1.30	1.82	2.70	6	....	....	2.59	3.80
3 1/2	1.00	1.35	1.89	2.80	...	....	....	....	....

BRIDGE BOLTS

Furnished to Order only

List adopted February 14, 1895

Per Pound

Square Head on One End and Square Nut on the Other, or Square Nut on each End

Diameter	5/8	3/4 to 1 1/8	1 1/4 to 1 1/2	1 5/8 to 2
Length, 31 in. to 4 ft.	$0.092	$0.088	$0.092	$0.100
" 4 ft. " 8 "	.088	.084	.088	.094
" 8 " "12 "	.084	.080	.084	.088
" 12 " "20 "	.080	.076	.080	.084

Both Ends Upset and Fitted with Hexagon Nuts

Diameter.....	3/4 to 1 1/8	1 1/4 to 1 1/2	1 5/8 to 2	2 1/8 to 3
Length, 4 ft. to 8 ft.	$0.120	$0.124	$0.132	$0.144
" 8 " "12 "	.110	.114	.122	.132
" 12 " "16 "	.100	.104	.112	.124
" 16 " "20 "	.092	.096	.104	.116

Dimensions of Upset Ends on Round Iron

Diameter of Bar	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/8	2 1/4	2 3/8	2 1/2	2 5/8	2 3/4	2 7/8	3
" " Upset	1	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/8	2 1/4	2 3/8	2 1/2	2 5/8	2 7/8	3	3 1/8	3 1/4	3 3/8	3 5/8	3 3/4
Length " "	2 3/4	3	3 1/4	3 1/2	4	4 1/2	5	5 1/4	5 1/2	5 3/4	6 1/2	6 3/4	7	7	7	7	7	7	7
Number " Threads	8	7	6	6	5 1/2	5	4 1/2	4 1/2	4 1/2	4	4	4	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/4	3

TRACK BOLTS—200 lbs. in a Keg

For Rail, lbs.....	8 and 10	12 and 16	20	24	30
Size	1 1/4x3 3/8	1 1/2x3 3/8	2x1 1/2	2 1/2x1 1/2	2 3/4x5 1/8

Made in Following Sizes

3/8x1 1/4, 1 1/2, 1 3/4, 2.....per lb., $....
1/2x2, 2 1/4, 2 1/2, 3..... " ....

5/8x2 1/2, 2 3/4, 3, 3 1/2....per lb., $....
3/4x3, 3 1/4, 3 1/2, 3 3/4, 4, 4 1/4 " ....

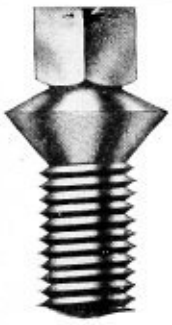
7/8x4, 4 1/4, 4 1/2, 4 3/4..per lb., $....

STOVE BOLTS

Flat Head — Round Head

Revised List of Flat and Round Head Stove Bolts. Adopted March 1, 1907

Length inches	Diam. 1/8 and 3/16 inch	Diam. 7/32 inch	Diam. 1/4 and 5/16 inch	Diam. 3/8 inch	Diam. 7/16 inch	Length inches	Diam. 1/8 and 3/16 inch	Diam. 1/4 inch	Diam. 5/16 and 3/8 inch	Diam. 7/16 inch	Diam. 1/2 inch
3/8	$0.85	$0.85	inch	.....	.....	3	$1.20	$1.50	$2.00	$2.70	$4.20
1/2	.85	.85	$1.20	.....	.....	3 1/4	1.20	1.60	2.10	2.85	4.40
5/8	.85	.85	1.20	.....	.....	3 1/2	1.20	1.70	2.20	3.00	4.60
3/4	.85	.85	1.20	$1.75	$2.65	3 3/4	1.20	1.80	2.30	3.15	4.80
7/8	.90	.90	1.25	1.80	2.70	4	1.20	1.90	2.40	3.30	5.00
1	.90	.90	1.30	1.85	2.75	4 1/4	1.20	2.00	2.50	3.45	5.20
1 1/8	.95	.95	1.35	1.90	2.85	4 1/2	1.20	2.10	2.60	3.60	5.40
1 1/4	1.00	1.00	1.40	1.95	2.90	4 3/4	1.20	2.20	2.70	3.75	5.60
1 3/8	1.05	1.05	1.45	2.00	3.00	5	1.20	2.30	2.85	3.90	5.80
1 1/2	1.10	1.10	1.50	2.05	3.10	5 1/4	1.20	2.40	3.00	4.10	6.00
1 3/4	1.15	1.15	1.55	2.15	3.20	5 1/2	1.20	2.50	3.15	4.30	6.20
2	1.20	1.20	1.60	2.30	3.40	5 3/4	1.20	2.60	3.30	4.50	6.40
2 1/4	1.20	1.25	1.70	2.40	3.60	6	1.20	2.75	3.45	4.70	6.60
2 1/2	1.20	1.30	1.80	2.50	3.80	6 1/4	1.20	2.90	3.60	4.90	6.80
2 3/4	1.20	1.40	1.90	2.60	4.00	6 1/2	1.20	3.05	3.75	5.10	7.00



BOILER PATCH BOLTS

Per 100. All 12 Threads

Length, inches	3/4	7/8	1	1 1/8	1 1/4	1 1/2
1/2 inch diam.,	$3.75	$4.00	$4.25	$4.50	$4.75	$5.25
5/8 " "	4.25	4.50	4.80	5.10	5.50	6.50
3/4 " "	....	6.00	6.50	6.80	7.25	8.25
7/8 " "	....	....	9.50	9.85	10.25	11.25
1 " "	....	....	13.50	14.00	14.75	16.25

Blank, Not Threaded

Diameter, inches,	1/2	5/8	3/4	7/8	1
Per pound,	$0.25	0.20	0.19	0.18	0.17

The length of bolts and blanks is taken from the largest diameter of bevel to point.
In ordering patch bolts, please specify the diameter first, then the length, thus: 3/4 x 7/8.

ELEVATOR BOLTS

Per Hundred

No. 2 Oval Head

No. 4 Key Head

No. 1 Countersunk Head

Oval Heads, 3/4 and 1/4 inch. Wrought iron	Key Heads, 3/4 and 1/4 inch. Wrought iron	Large Countersunk Heads. Wrought Iron					
		1/4 and 1/4 inch		5/16 inch		3/8 inch	
3/4 in. $1.50	3/4 in. $1.50	3/4 in.	$2.20	1 in.	$3.00	1 in.	$4.00
7/8 " 1.60	7/8 " 1.60	7/8 "	2.30	1 1/4 "	3.20	1 1/4 "	4.30
1 " 1.60	1 " 1.60	1 "	2.30	1 1/2 "	3.40	1 1/2 "	4.60
1 1/8 " 1.70	1 1/4 " 1.80	1 1/4 "	2.40				
1 1/4 " 1.80							

For Elevator Buckets see page 396.

PLANER HEAD BOLTS

Price per 100 without Nuts

Diameter of Head		7/8	1	1 1/8	1 1/8	1 1/4
Length of Head		5/16	5/16	3/8	3/8	7/16
Diameter of Screw		1/2	9/16	5/8	11/16	3/4
Length under Head to Extreme Point	1	$10.00	.....	.....	.....	.....
	1 1/4	10.50	$12.00	$13.30	$13.30	$17.00
	1 1/2	10.50	12.25	14.00	14.00	17.50
	1 3/4	.....	12.45	14.80	14.80	18.00
	2	.....	13.75	15.70	15.70	19.00
Finished Case Hardened Hexagon Nuts for above		10.00	12.00	15.00	16.00	18.00

All 12 threads to the inch.

NUTS

Square

Hexagon

Square

Hexagon

HOT PRESSED — **COLD PUNCHED**

United States Standard List. List Adopted January 1, 1906

Short Diam.	Thickness	Hole	Size of Bolt	Square Blank	Square Tapped	Hexagon Blank	Hexagon Tapped	Short Diam.	Thickness	Hole	Size of Bolt	Square Blank	Square Tapped	Hexagon Blank	Hexagon Tapped
				Per 100 Pounds								Per 100 Pounds			
1/2	1/4	3/16	1/4	$13.00	$15.00	$20.00	$22.50	1/2	1/4	3/16	1/4	$13.80	$15.80	$21.00	$23.50
17/32	5/16	1/4	5/16	12.00	13.50	18.00	20.00	17/32	5/16	1/4	5/16	12.80	14.30	19.00	21.00
9/16	3/8	19/64	3/8	10.50	11.60	14.00	15.60	9/16	3/8	19/64	3/8	11.00	12.10	14.70	16.30
25/32	7/16	11/32	7/16	10.00	10.90	13.00	14.30	25/32	7/16	11/32	7/16	10.50	11.40	13.70	15.00
7/8	1/2	13/32	1/2	9.00	9.70	11.20	12.20	7/8	1/2	13/32	1/2	9.30	10.00	11.50	12.50
31/32	9/16	29/64	9/16	9.00	9.60	11.20	12.10	31/32	9/16	29/64	9/16	9.30	9.90	11.50	12.40
1 1/16	5/8	1/2	5/8	8.70	9.20	10.50	11.20	1 1/16	5/8	1/2	5/8	8.90	9.40	10.70	11.40
1 1/4	3/4	5/8	3/4	8.50	8.90	10.00	10.60	1 1/4	3/4	5/8	3/4	8.60	9.00	10.20	10.80
1 7/16	7/8	47/64	7/8	8.40	8.80	9.90	10.50	1 7/16	7/8	47/64	7/8	8.60	9.00	10.20	10.80
1 5/8	1	27/32	1	8.40	8.80	9.90	10.50	1 5/8	1	27/32	1	8.60	9.00	10.20	10.80
1 13/16	1 1/8	15/16	1 1/8	8.40	8.80	9.90	10.50	1 13/16	1 1/8	15/16	1 1/8	8.60	9.00	10.20	10.80
2	1 1/4	1 1/16	1 1/4	8.40	8.80	9.90	10.50	2	1 1/4	1 1/16	1 1/4	8.80	9.20	10.50	11.10
2 3/16	1 3/8	1 5/32	1 3/8	8.50	9.00	10.00	10.70	2 3/16	1 3/8	1 5/32	1 3/8	8.80	9.30	10.50	11.20
2 3/8	1 1/2	1 9/32	1 1/2	8.80	9.40	10.30	11.10	2 3/8	1 1/2	1 9/32	1 1/2	9.60	10.20	11.30	12.10
2 9/16	1 5/8	1 25/64	1 5/8	9.00	9.70	10.50	11.40	2 9/16	1 5/8	1 25/64	1 5/8	9.60	10.30	11.30	12.20
2 3/4	1 3/4	1 1/2	1 3/4	9.30	10.00	10.80	11.70	2 3/4	1 3/4	1 1/2	1 3/4	10.20	10.90	12.10	13.00
2 15/16	1 7/8	1 5/8	1 7/8	9.50	10.30	11.00	12.03	2 15/16	1 7/8	1 5/8	1 7/8	10.20	11.00	12.10	13.10
3 1/8	2	1 23/32	2	9.70	10.60	11.20	12.30	3 1/8	2	1 23/32	2	10.60	11.50	12.60	13.70
3 5/16	2 1/8	1 27/32	2 1/8	10.00	11.00	11.70	12.90	3 5/16	2 1/8	1 27/32	2 1/8	11.00	12.00	13.00	14.20
3 1/2	2 1/4	1 31/32	2 1/4	10.00	11.10	11.70	13.00	3 1/2	2 1/4	1 31/32	2 1/4	11.50	12.60	13.50	14.80
3 11/16	2 3/8	2 1/16	2 3/8	10.30	11.50	12.20	13.60								
3 7/8	2 1/2	2 5/16	2 1/2	10.50	11.80	12.40	13.90								
4 1/4	2 3/4	2 3/8	2 3/4	11.00	12.40	13.00	14.60								
4 5/8	3	2 5/8	3	11.50	13.00	13.50	15.20								

Sizes not enumerated on above list will be charged extra at discretion of manufacturers.

SEMI-FINISHED AND FINISHED, CASE HARDENED

Adopted February 1, 1906

Semi-Finished

Finished, Case Hardened

Each

For Bolt.....	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2	2 3/4	3
Width.....	1/2	19/32	11/16	25/32	7/8	31/32	1 1/16	1 1/4	1 7/16	1 5/8	1 13/16	2	2 3/16	2 3/8	2 9/16	2 3/4	2 15/16	3 1/8	3 1/2	3 7/8	4 1/4	4 5/8
Thickness...	1/8	7/16	5/16	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/4	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2	2 3/4	3
No of Thread.	20	18	16	14	12	12	11	10	9	8	7	7	6	6	5 1/2	5	5	4 1/2	4 1/2	4	4	3 1/2
Regular Semi-Finished.....	$0.02	.02 1/2	.03 1/4	.03 3/4	.04 1/2	.05 1/2	.06 1/2	.08 1/2	.12	.16 1/2	.22	.30	.45	.62	.82	1.20	1.45	1.80	2.75	4.00	5.50	8.50
Finished, Case Hardened..	$0.06	.07	.08	.09	.10	.12	.16	.22	.27	.38	.50	.66	.90	1.20	1.45	1.75	2.50	3.25	5.50	8.50	12.00	18.00

IRON

National Classification, Adopted January 3, 1896

REGULAR BAR SIZES

Flats, ... 1½ to 4x⅜ to 1 inch.
Rounds and Squares, ... 1 to 1⅞ inch.

The extras given below in cents and fractions of a cent, are to be added to the rate quoted for regular bar sizes.

FLAT IRON

Size		Price
1½ to 4 x ⅜ to 1 inch,		Base
1⅛ " 1⅜x ⅜ " 1 "	extra	$0.10
1 " 1 1/16x ⅜ " ⅞ "	"	.20
¾ " 15/16x ⅜ " ¾ "	"	.40
⅝ " 11/16x ⅜ " ⅝ "	"	.50
½ " 9/16x ⅜ " ½ "	"	.90
1⅜ " 4 x1⅛ " 1½ "	"	.30
2 " 4 x1⅝ " 2 "	"	.50
2 " 4 x2⅛ " 3 "	"	.60
4¼ " 6 x ⅜ " 1 "	"	.10
4¼ " 6 x1⅛ " 1½ "	"	.40
4¼ " 6 x1⅝ " 2 "	"	.60
4¼ " 6 x2⅛ " 3 "	"	.80
6¼ " 8 x ⅜ " 1 "	"	.60
6¼ " 8 x1⅛ " 1½ "	"	.60
6¼ " 8 x1⅝ " 2 "	"	.80
6¼ " 8 x2⅛ " 3 "	"	1.00
8¼ " 10 x ⅜ " 1 "	"	.80
8¼ " 10 x1⅛ " 1½ "	"	.90
8¼ " 10 x1⅝ " 2 "	"	1.00

ROUND AND SQUARE IRON

Size		Price
1 to 1⅞ inch,		Base
2 " 2⅞ "	extra	$0.20
3 " 3½ "	"	.50
3⅝ " 4 "	"	.80
4⅛ " 4½ "	"	1.00
4⅝ " 5 "	"	1.30
5⅛ " 6 "	"	1.80
6⅛ " 6½ "	"	2.20
6⅝ " 7¼ "	"	2.50
¾ " ⅞ "	"	.10
⅝ " 11/16 "	"	.20
½ " 9/16 "	"	.30
7/16 " 15/32 "	"	.40
⅜ " 13/32 "	"	.50
5/16 " 11/32 "	"	.70
¼ " 9/32 "	"	.90
7/32 inch,	"	1.40
3/16 "	"	2.50

OVAL IRON

Size		Price
⅞ to 1½ inch wide,	extra	$0.40
¾ " 13/16 " "	"	.50
⅝ " 11/16 " "	"	.60
½ " 9/16 " "	"	.80
⅜ " 7/16 " "	"	1.10
½ " 9/16 " " x 3/16 inch thick,	"	1.00
⅝ " 11/16 " " x ⅛ " "	"	1.20

HEAVY BAND IRON

Size		Price
8¼ to 10 x¼ to 5/16 inch,	extra	$0.70
7 " 8 x¼ " 5/16 "	"	.70
6¼ " 6¾x¼ " 5/16 "	"	.50
4½ " 6 x¼ " 5/16 "	"	.30
1½ " 4 x¼ " 5/16 "	"	.20
1 " 1⅜x¼ " 5/16 "	"	.30
¾ " 15/16x¼ " 5/16 "	"	.50
⅝ " 11/16x¼ " 5/16 "	"	.80
½ " 9/16x¼ " 5/16 "	"	1.00
⅜ " 7/16x¼ " 5/16 "	"	1.50

Heavy bands 7/32 inch thick, 1/10 cent per pound higher than ¼ to 5/16 inch thick.

LIGHT BAND IRON

Size		Price
7 to 8 xNo. 9 to 3/16,	extra	$0.90
7 " 8 xNos. 10, 11 and 12,	"	1.00
6¼ " 6¾xNo. 9 to 3/16,	"	.70
6¼ " 6¾xNos. 10, 11 and 12,	"	.80
4¼ " 6 xNo. 9 to 3/16,	"	.50
4¼ " 6 xNos. 10, 11 and 12,	"	.60
1¼ " 4 xNo. 9 to 3/16,	"	.40
1¼ " 4 x Nos. 10, 11 and 12,	"	.50
1 " 1 3/16x No. 9 to 3/16,	"	.50
1 " 1 3/16x Nos. 10, 11 and 12,	"	.60
13/16 " ⅞x No. 9 to 3/16,	"	.60
13/16 " ⅞x Nos. 10, 11 and 12,	"	.70
11/16 " ¾x No. 9 to 3/16,	"	.80
11/16 " ¾x Nos. 10, 11 and 12,	"	.90
9/16 " ⅝x No. 9 to 3/16,	"	1.00
9/16 " ⅝x Nos. 10, 11 and 12,	"	1.10
7/16 " ½x No. 9 to 3/16,	"	1.30
7/16 " ½x Nos. 10, 11 and 12,	"	1.40
⅜x No. 9 to 3/16,	"	1.50
⅜x Nos. 10, 11 and 12,	"	1.60

HALF OVAL AND HALF ROUND IRON

Size		Price
2¼ to 3 inch wide,	extra	$0.60
⅞ " 2 " "	"	.50
¾ " 13/16 " "	"	.70
⅝ " 11/16 " "	"	.90
½ " 9/16 " "	"	1.20
⅜ " 7/16 " "	"	2.50
5/16 inch wide,	"	3.50
¼ " "	"	4.50

Half oval less than ¼ the width in thickness, extra price.

IRON

Norway and Swedish Iron Classification, 1895

FLATS

1½ to 4 by ⅜ to 1½ inch thick	Rates
4¼ " 6 " ⅜ " 1 "	1/10 extra
1¾ to 6 by 1⅛ inch thick	2/10 "
1¼ and 1⅜ by ⅜ to 1 inch thick	1/10 "
1 " 1⅛ " ⅜ " ¾ " " "	2/10 "
½, ⅝, ¾ and ⅞ by ⅜ to ⅝ inch thick	1/10 "
1½ to 6 by ¼ and 5/16 inch thick	2/10 "
1 " 1⅜ " ¼ " 5/16 " "	3/10 "
¾ " ⅞ " ¼ " 5/16 " "	1/10 "
½ " ⅝ " ¼ " 5/16 " "	1 "

HALF OVALS AND HALF ROUNDS

⅞ to 2 inches	7/10 extra
⅝ " ¾ "	1 2/10 "
½ inch	1 5/10 "
⅜ and 7/16 inch	3 "

NAIL RODS

⅜ by 3/16, 25 lb. and 50 lb. bundles ..... 1½ extra

ROUNDS AND SQUARES

1 to 1⅞ inches	Rates
2 " 2⅝ "	1/10 extra
2¾ " 3¼ "	2/10 "
3½ " 4 "	5/10 "
¾ " ⅞ "	1/10 "
9/16 " ⅝ "	2/10 "
7/16 " ½ "	3/10 "
⅜ inch	4/10 "
5/16 "	6/10 "
¼ "	1 "
3/16 "	3 "

OVALS

⅞ to 2 inches	4/10 extra
⅝ " ¾ "	6/10 "
½ inch	8/10 "
⅜ and 7/16 inch	1 2/10 "

STEEL

TOOL STEEL

PARK BROS.

BLACK DIAMOND — SILVER BRANDS

ROUND, SQUARE, AND OCTAGON

⅝ to 2 inches		Base	9/64 to ½ inch	extra	0.5c
2⅛ " 3 "	extra	1.0c	7/16 " ⅜ "	"	1.0c
3⅛ " 4 "	"	1.5c	5/16 and 11/32 inch	"	2.0c
4⅛ " 5 "	"	2.0c	¼ " 9/32 "	"	3.0c
5⅛ " 6 "	"	2.5c	3/16 inch	"	5.0c
6⅛ " 7 "	"	3.0c	5/32 "	"	10.0c
7⅛ " 8 "	"	3.5c	⅛ "	"	18.0c

FLAT

2 to 9/16 inch wide by 2 to ⅝ inch thick ..... Base

	Per lb.		Per lb.	
⅛x3/16	extra	20.0c	5/16x ⅜ to ⅝	extra	1.5c
⅛x¼	"	15.0c	5/16x 11/16 " 8	"	1.0c
⅛x5/16	"	8.0c	⅜x 7/16 " 8	"	1.0c
⅛x⅜	"	4.0c	7/16x ½ " 8	"	0.5c
⅛x7/16 to ½	"	3.0c	½x 9/16 " 8	"	0.5c
⅛x9/16 " 7	"	2.0c	9/16x2⅛ " 8	"	1.0c
⅛x7⅛ to 8	"	3.0c	9/16 to 2 by ⅝ to 2	"	0.0c
3/16x¼	"	5.0c	⅝ " 2 " 2⅛ " 7	"	1.0c
3/16x5/16	"	4.0c	⅝ " 1¾ " 7⅛ " 8	"	1.0c
3/16x⅜	"	3.0c	1⅞ " 2 " 7⅛ " 8	"	1.5c
3/16x 7/16 to ⅝	"	2.0c	2⅛ " 3 " 2⅛ " 5	"	1.0c
3/16x 11/16 " 2	"	1.5c	2⅛ " 3 " 5⅛ " 8	"	1.5c
3/16x2⅛ " 7	"	1.0c	3⅛ " 4 " 3⅛ " 6	"	1.5c
3/16x7⅛ " 8	"	2.0c	3⅛ " 4 " 6⅛ " 8	"	2.0c
¼x 5/16 " ⅜	"	2.0c	4⅛ " 5 " 4⅛ " 7	"	2.0c
¼x 7/16 " ⅝	"	1.5c	4⅛ " 5 " 7⅛ " 8	"	2.5c
¼x 11/16 " 2	"	1.5c	5⅛ " 6 " 5⅛ " 8	"	2.5c
¼x2⅛ " 7	"	1.0c	6⅛ " 7 " 6⅛ " 7	"	3.0c
¼x7⅛ " 8	"	2.0c	6⅛ " 8 " 7⅛ " 8	"	3.5c

SOFT STEEL

Standard Classification of Mild or Soft Steel. Adopted November 10, 1899.

REGULAR BAR SIZES—NOT EXTRA

Round and Square Steel.....3 to 3 inches
Flat Steel.....1 to 6 inches x 3/8 to 1 inch

FLAT BARS AND HEAVY BANDS

1 to 6 in. x 3/8 to 1 in.		Base
1 " 6 " x 1/4 and 5/16 "	extra	$0.20
11/16 " 15/16 " x 3/8 to 3/4 "	"	.40
11/16 " 15/16 " x 1/4 and 5/16 "	"	.50
9/16 and 5/8 in. x 3/8 to 1/2 "	"	.50
9/16 " 5/8 " x 1/4 and 5/16 in.	"	.70
1/2 in. x 3/8 and 7/16 in.	"	.90
1/2 " x 1/4 " 5/16 "	"	1.10
7/16 " x 3/8 in.	"	1.00
7/16 " x 1/4 and 5/16 in.	"	1.20
3/8 " x 1/4 " 5/16 "	"	1.50
1 1/8 to 6 in. x 1 1/16 to 1 3/16 in.	"	.10
1 1/8 " 6 " x 1 1/4 " 1 1/2 "	"	.20
1 3/4 " 6 " x 1 5/8 " 2 3/4 "	"	.30
3 1/8 " 6 " x 3 " 4 "	"	.40

For intermediate sizes, the next highest extra to be charged.

ROUNDS AND SQUARES

3/4 to 3 in.		Base
5/8 " 11/16 "	extra	$0.10
1/2 " 9/16 "	"	20
7/16 in.	"	.40
3/8 "	"	.50
5/16 "	"	.60
1/4 and 3/32 in.	"	.70
7/32 in.	"	1.00
3/16 "	"	2.00
3 1/16 to 3 1/2 in.	"	.15
3 9/16 " 4 "	"	.25
4 1/16 " 4 1/2 "	"	.30
4 9/16 " 5 "	"	.40
5 1/8 " 5 1/2 "	"	.50
5 5/8 " 6 "	"	.75
6 1/2 " 6 1/8 "	"	1.00
6 3/8 " 7 5/8 "	"	1.25

For intermediate sizes, the next highest extra to be charged.

LIGHT BAND

1 1/2 to 6 in. x Nos. 7, 8, 9 and 3/16 in.	extra	$0.40
1 1/2 " 6 " x " 10, 11, 12 and 1/8 in.	"	.60
1 " 1 7/16 " x " 7, 8, 9 and 3/16 in.	"	.50
1 " 1 7/16 " x " 10, 11, 12 and 1/8 in.	"	.70
13/16 " 15/16 " x " 7, 8, 9 and 3/16 in.	"	.70
13/16 and 15/16 " x " 10, 11, 12 and 1/8 in.	"	.80
11/16 " 3/4 " x " 7, 8, 9 and 3/16 in.	"	1.00
11/16 " 3/4 " x " 10, 11 12, and 1/8 in.	"	1.20
9/16 " 5/8 " x " 7, 8, 9 and 3/16 in.	"	1.20
9/16 " 5/8 " x " 10, 11, 12 and 1/8 in.	"	1.30
1/2 in. x Nos. 7, 8, 9 and 3/16 in.	"	1.30
1/2 " x " 10, 11 12 and 1/8 in.	"	1.50
7/16 " x " 7, 8, 9, and 3/16 in.	"	1.80
7/16 " x " 10, 11, 12 and 1/8 in.	"	2.10
3/8 " x " 7, 8, 9 and 3/16 in.	"	1.90
3/8 " x " 10, 11, 12 and 1/8 in.	"	2.40

For intermediate sizes, the next highest extra to be charged.

OVALS

7/8 to 1 1/4 in. wide	extra	$0.40
3/4 " 13/16 " "	"	.50
5/8 " 11/16 " "	"	.60
1/2 " 9/16 " "	"	.80
3/8 " 7/16 " "	"	1.00

For intermediate sizes, the next highest extra to be charged.

HALF OVALS AND HALF ROUNDS

7/8 in. and larger x 7/32 in. and thicker	extra	$0.50
3/4 " to 13/16 in. x 3/16 in. " "	"	.80
5/8 " " 11/16 x 5/32 in. (No. 9)	"	1.00
1/2 " " 9/16 in. x 1/8 in. and thicker	"	1.30
7/16 " x 7/64 in. and thicker	"	2.10
3/8 " x 3/32 " " "	"	2.50
5/16 " x 5/32 " " "	"	2.60

WEIGHTS OF ROUND AND SQUARE IRON

Per Lineal Foot

Size in Inches	○ Weight, in Pounds	□ Weight, in Pounds	Size in Inches	○ Weight, in Pounds	□ Weight, in Pounds	Size in Inches	○ Weight, in Pounds	□ Weight, in Pounds	Size in Inches	○ Weight, in Pounds	□ Weight, in Pounds
3/16	.093	.1184	13/16	1.746	2.223	1 3/4	8.101	10.31	4	42.33	53.89
7/32	.1266	.1612	7/8	2.025	2.579	1 7/8	9.3	11.84	4 1/4	47.78	60.84
1/4	.1653	.2105	15/16	2.325	2.96	2	10.58	13.47	4 1/2	53.57	68.2
9/32	.2093	.2665	1	2.645	3.368	2 1/8	11.95	15.21	4 3/4	59.69	75.99
5/16	.2583	.329	1 1/16	2.986	3.803	2 1/4	13.39	17.05	5	66.13	84.2
11/32	.3126	.398	1 1/8	3.348	4.263	2 3/8	14.92	19.	5 1/4	72.91	92.83
3/8	.372	.4736	1 3/16	3.73	4.75	2 1/2	16.53	21.05	5 1/2	80.02	101.9
13/32	.4365	.5558	1 1/4	4.133	5.263	2 5/8	18.23	23.21	5 3/4	87.46	111.4
7/16	.5063	.6446	1 5/16	4.557	5.802	2 3/4	20.01	15.47	6	95.23	121.3
1/2	.6613	.842	1 3/8	5.001	6.368	2 7/8	21.87	27.84	6 1/2	111.8	142.3
9/16	.837	1.066	1 7/16	5.466	6.96	3	23.81	30.31	7	129.6	165.
5/8	1.033	1.316	1 1/2	5.952	7.578	3 1/4	27.94	35.57	7 1/2	148.8	189.5
11/16	1.25	1.592	1 9/16	6.458	8.223	3 1/2	32.41	41.26	8	169.3	215.6
3/4	1.488	1.895	1 5/8	6.985	8.893	3 3/4	37.2	47.37	8 1/2	191.1	243.4

WEIGHTS OF FLAT IRON

Per Lineal Foot

Width in Inches	Thickness, in Inches									
	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1
1/2	.211	.361	.422	.491	.634	.....	.....	.....	.....	.....
5/8	.26	.42	.51	.64	.784	.9	.....	.....	.....	.....
3/4	.316	.471	.633	.79	.95	1.26	1.58	.....	.....	.....
7/8	.37	.551	.73	.915	1.09	1.46	1.82	2.19	.....	.....
1	.421	.623	.832	1.04	1.25	1.67	2.08	2.5	2.92	.....
1 1/8	.475	.7	.94	1.17	1.41	1.88	2.34	2.81	3.28	3.75
1 1/4	.524	.782	1.04	1.3	1.56	2.08	2.6	3.12	3.64	4.17
1 3/8	.574	.86	1.15	1.43	1.72	2.29	2.86	3.44	4.01	4.58
1 1/2	.631	.94	1.25	1.56	1.88	2.5	3.13	3.75	4.38	5.
1 5/8	.682	1.02	1.35	1.69	2.03	2.71	3.38	4.01	4.74	5.42
1 3/4	.73	1.09	1.4	1.82	2.19	2.92	3.65	4.37	5.1	5.83
2	.831	1.24	1.67	2.08	2.5	3.33	4.17	5.	5.83	6.67
2 1/4	.945	1.41	1.88	2.34	2.81	3.75	4.69	5.63	6.51	7.5
2 1/2	1.04	1.56	2.08	2.6	3.12	4.17	5.21	6.25	7.29	8.33
2 3/4	1.14	1.72	2.29	2.86	3.44	4.59	5.73	6.87	8.02	9.17
3	1.25	1.87	2.5	3.12	3.75	5.	6.25	7.5	8.75	10.
3 1/4	1.35	2.03	2.71	3.38	4.07	5.42	6.77	8.12	9.48	10.83
3 1/2	1.46	2.19	2.92	3.65	4.38	5.83	7.29	8.75	10.21	11.61
3 3/4	1.56	2.34	3.12	3.9	4.69	6.25	7.81	9.37	10.94	12.5
4	1.67	2.5	3.33	4.17	5.	6.67	8.33	10.	11.67	13.33
4 1/2	1.87	2.81	3.75	4.69	5.63	7.5	9.38	11.25	13.13	15.6
5	2.08	3.13	4.17	5.21	6.25	8.34	10.42	12.5	14.59	16.67
6	2.5	3.75	5.	6.25	7.5	10.	12.5	15.	17.5	20.

WEIGHTS OF SHEETS 9/16 INCH TO 2 INCHES THICK

Thickness in Inches		Weight, Square Foot		Thickness in Inches		Weight Square Foot	
Fractions	Decimals	Iron	Steel	Fractions	Decimals	Iron	Steel
9/16	.5625	22.73	23.5	1 1/8	1.125	45.	46.
5/8	.625	25.26	26.	1 3/16	1.875	47.5	48.5
11/16	.6875	27.79	28.5	1 1/4	1.25	50.	51.
3/4	.75	30.31	31.	1 5/16	1.3125	52.5	53.5
13/16	.8125	32.84	33.5	1 3/8	1.375	55.	56.1
7/8	.875	35.37	36.	1 7/16	1.4375	57.5	58.65
15/16	.9375	37.89	38.5	1 1/2	1.5	60.63	61.2
1	1.000	40.42	41.	1 3/4	1.75	70.73	71.4
1 1/16	1.0625	42.5	43.5	1 7/8	1.875	75.	76.5
				2	2.	80.83	81.6

Sheet mills roll iron and steel sheets to United States standard gauge, unless otherwise ordered. Plate mills usually roll heavy plates 3/16 and heavier, and light plates No. 8 to No. 12 to Birmingham gauge.

NAILS AND SPIKES

GALVANIZED WIRE BOAT NAILS

No.	Length	100 lb. Kegs
60d	6 inches	base, per lb.
50d	5½ "	"
40d	5 "	"
30d	4½ "	"
20d	4 "	"
16d	3½ "	extra, $0.05
12d	3¼ "	" .05
10d	3 "	" .05
9d	2¾ "	" .10
8d	2½ "	" .10
7d	2¼ "	" .20
6d	2 "	" .20
5d	1¾ "	" .30
4d	1½ "	" .30
3½d	1⅜ "	" .40
3d	1¼ "	" .45
2d	1 "	" .75

BUTTON HEAD, CHISEL POINT WIRE SPIKES

100 lb. Kegs

Size	No. per lb.	Bright Wire per keg	Galv. Wire per keg
5/16 x 6 in.	7½	....	....
3/8 x 7 "	6½	....	....
3/8 x 8 "	4¼	....	....
3/8 x 9 "	3⅔	....	....
3/8 x 10 "	3¼	....	....
3/8 x 12 "	2¾	....	....

ROUND HEAD, BLUNT POINT BOAT NAILS

Size			
¾	inch	per lb.	$0.18
⅞	"	"	.15
1	"	"	.13
1⅛	"	"	.13
1¼	"	"	.12
1⅜	"	"	.12
1¾	"	"	.12
2	to 2¼ inch	"	.12
2½	" 2¾ "	"	.11½
3	" 6 "	"	11½

ROUND HEAD, CHISEL POINT BOAT NAILS

Size			
¾	inch	per lb.	$0.23
⅞	"	"	.20
1	"	"	.18
1⅛	"	"	.17
1¼	"	"	.17
1½	"	"	.16
1¾	"	"	.16
2	"	"	.15
2¼	"	"	.15
2½	"	"	.15
2¾	"	"	.15
3	"	"	.15
3¼	"	"	.14
3½	"	"	.14
3¾	"	"	.13½
4	"	"	.13½

SPIKES

Wrought Boat Spikes

200 lb. Kegs

		Base	Extra	Black per lb.	Galv. per lb.
¾	in. sq. 12 to 24 in. length	....	$0.05	....	....
5/8	" " 8 " 12 " "	....	.05	....	....
½	" " 6 " 12 " "	....	.05	....	....
7/16	" " 6 " 12 " "	....	.10	....	....
3/8	" " 4 " 12 " "	....	.20	....	....
5/16	" " 4 " 8 " "	....	.35	....	....
¼	" " 4 " 8 " "	....	.65	....	....
¼	" " 3 " 3½ " "	....	.90	....	....

3/8 and 5/16 shorter than 4 inch, ¼ cent extra.
7/8, 7/16, ½ and 5/8 longer than 12 inch, 10 cents extra.

Number of Boat Spikes in Keg of 200 Pounds

Length	Diameter						
	¼ Sq.	5/16 Sq.	3/8 Sq.	7/16 Sq.	½ Sq.	5/8 Sq.	¾ Sq.
3	3,300	....	....	....	....	....	....
3½	2,880	....	....	....	....	....	....
4	2,343	1,671	....	....	....	....	....
4½	2,200	1,364	1,039	....	....	....	....
5	2,030	1,308	935	....	....	....	....
5½	1,828	1,175	880	....	....	....	....
6	1,624	1,115	710	562	433	....	....
7	1,420	988	665	516	400	....	....
8	1,220	849	602	453	337	....	....
9	....	....	519	409	305	....	....
10	....	....	468	369	297	182	....
12	....	....	410	302	241	155	....
14	....	....	....	....	216	130	95
16	....	....	....	....	182	122	80

RAILROAD SPIKES

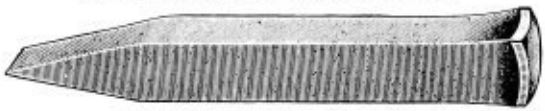
Size Measured Under Head	Average No. per Keg of 200 lbs.	Ties, 2 Feet Between Center, 4 Spikes per Tie, Makes per Mile	Rail Used Weight per yard	Extra per lb.
5½x9/16	360	5920 lbs.—29⅗ Kegs.	45 to 100	Base
5 x9/16	405	5230 " —26 "	40 " 56	"
4½x9/16	460	4636 " —23 "		"
5 x½	475	4460 " —22 9/10 "	35 " 40	$0.05
4½x½	518	4080 " —20 4/10 "	28 " 35	.05
4 x½	605	3515 " —17½ "	24 " 35	.05
3½x½	670	3180 " —15⅞ "		.05
4½x7/16	690	3090 " —15½ "	20 " 30	.10
4 x7/16	780	2730 " —13⅗ "		.10
3½x7/16	890	2377 " —12 "		.10
4½x⅜	780	2730 " —13⅗ "		.20
4 x⅜	1025	2044 " —10⅕ "	16 " 25	.20
3½x⅜	1250	1740 " — 8½ "		.20
3 x⅜	1380	1592 " — 8 "	16 " 20	.20
2½x⅜	1650	1280 " — 6⅖ "		.30
3 x5/16	1880	1152 " — 5¾ "	12 " 16	.45
2½x5/16	2230	948 " — 4¾ "	8 " 12	.45

DRIFT BOLTS

Plain Round

Round Pointed and Countersunk Head

Pointed Round



Square Pointed and Swelled Head

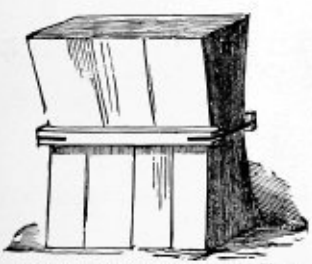
Plain Square

Pointed Square

FURNISHED TO ORDER, ONLY

Round						Square					
Size, inches	½	⅝	¾	⅞	1	1⅛	½	⅝	¾	⅞	1	1⅛
Per lb., Plain...$												
Extra for Pointing or Heading...per lb.,	$0.20						$0.20					
" " " and " ... "	.40						.40					

SHINGLES AND HEADING BANDS



Put up barrels, about 500 lbs.

ECONOMY BRAND

So called on account of their being the most economical brand made. Tough and light weight.

Size Inches	Estimate for 1,000,000 Shingles lbs.	Black per lb.	Jap'nd per lb.	Galv. per lb.
½x11	200	....	....	....
½x12	220	....	....	....
½x13	242	....	....	....
½x14	270	....	....	....

STEEL BANDS

Size Inches	Estimate for 1,000,000 Shingles lbs.	Black per lb.	Jap'nd per lb.	Galv. per lb.
11x⅝	300	....	....	....
12x⅝	330	....	....	....
13x⅝	360	....	....	....
14x⅝	400	....	....	....
16x⅝	....	....	....	....
18x⅝	....	....	....	....
20x⅝	....	....	....	....

SHINGLE BAND NAILS

100 lb. Kegs

NOTE.—The ⅞ G. C. are plain Cut Nails. The "C" Wire Nails are made especially for us, and are thoroughly annealed.

Grade	Estimates for 1,000,000 Shingles, lbs.	Number to lb.	Price per Keg
⅞ G. C.	45	800	.....
"C" Wire	40	1,200	.....

NAILS—WIRE

Adopted December 1, 1896

LENGTH AND GAUGE OF COMMON WIRE NAILS

2d	3d	4d	5d	6d	7d	8d	9d	10d	12d	16d	20d	30d	40d	50d	60d
1 in.	1¼	1½	1¾	2	2¼	2½	2¾	3 in.	3¼	3½	4	4½	5	5½	6
No. 16	15½	13½	13	12½	12	11½	11	10	9½	8½	6¾	6	4½	3½	3

COMMON, FENCE, SHINGLE, TOBACCO, FLOORING AND COMMON BRADS

	Advances
20d to 60d	Base
10d " 16d	$0.05
8d and 9d	.10
6d " 7d	.20
4d " 5d	.30
3d	.45
2d	.70

Barbed Common and Barbed Car Nails, 15c. advance over common.

CASING AND SMOOTH BOX

10d and larger	$0.15
8d " 9d	.25
6d " 7d	.35
4d " 5d	.50
3d	.70
2d	1.00

Barbed Box, 15c. advance over smooth.

SMOOTH FINISHING

10d and larger	$0.25
8d " 9d	.35
6d " 7d	.45
4d " 5d	.65
3d	.85
2d	1.15

FINE

	Advances
2d	$1.00
3d	.50

SLATING

2d 1 inch	$0.80
3d 1¼ "	.60
4d 1½ "	.40
5d 1¾ "	.40
6d 2 "	.30

BARBED ROOFING

¾ inch	$0.75
⅞ "	.65
1 "	.60
1⅛ "	.60
1¼ "	.55
1½ and 1¾ inch	.45
2 inch	.35

BARREL

¾ inch	$1.00
⅞ "	.85
1 "	.70
1⅛ "	.60
1¼ "	.50
1⅜ "	.40
1½ "	.30

CLINCH

	Advances
2d	$1.05
3d	.85
4d and 5d	.65
6d " 7d	.55
8d " 9d	.45
10d to 20d	.35

HINGE

4d	$0.80
6d	.70
8d	.60
10d and larger	.50

BARBED DOWEL PINS

⅝ inch	$1.25
¾ "	1.00
⅞ "	.85
1 "	.70
1⅛ "	.60
1¼ "	.60
1⅜ "	.60
1½ "	.60

LINING

¾ inch	$1.20
⅞ "	1.00
1 "	.80
	per lb.

Galvanized, extra

Shingle Band Nails, see same page as Shingle Bands.

COUNTERSUNK HEAD, CHISEL POINTED, STEEL NAIL

1½x3/16 and 2x3/16	per lb.,	$....
1½, 1¾, 2, 2½ and 3x¼	"	....
2½ and 3x5/16	"	....
3x⅜	"	....
Galvanized, extra	"	....

CLOUT NAILS

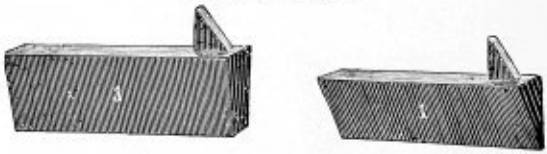
Length inches	Black per lb.	Tinned per lb.	Length inches	Black per lb.	Tinned per lb.
3/8	$0.60	$0.72	1⅛	$0.27	$0.38
½	.41	.52	1¼	.27	.38
5/8	.34	.45	1½	.27	.38
¾	.31	.42	1¾	.27	.38
⅞	.29	.40	2	.27	.38
1	.27	.38	....	....	....

HORSE SHOES—Light, Medium and Heavy

Fore Hind

Burden's Shoes	per lb.,	$....
Perkins' "	"	....
" extra light pattern, Nos. 1 to 4, front and hind	"	....
Mule Shoes	"	....

STEEL TOE CALKS



One Prong, Blunt One Prong, Sharp

Nos. 0, 1, 2, 3, 4, 5, 6

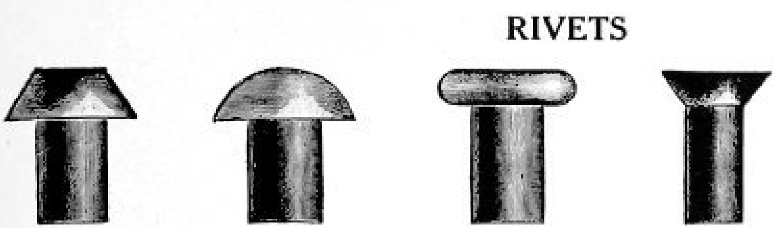
All sizes, one prong, blunt	per lb.,	$0.10	
" " two " "	"	.11	
" " one " sharp	"	.12½	
" " two " "	"	.13½	

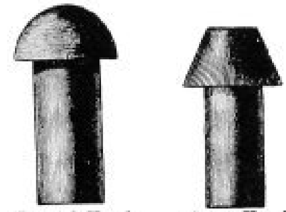
HORSE NAILS

	Nos.	5	6	7	8	9	10
Capewell	per lb.,	$0.22	$0.19	$0.18	$0.17	$0.15	$0.16
Coleman	"	.21	.18	.16	.15	.14	.13
Au Sable	"	.31	.28	.26	.25	.24	.23

State if city or country heads are wanted.

RIVETS





Round Head Cone Head

NORWAY IRON RIVETS

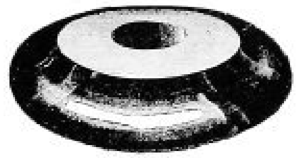
Price per Pound in 10 lb. and 5 lb. Boxes. List of January 8, 1894

Size of Wire	Length, Inches: 1 and Longer	7/8	3/4	5/8	1/2	15/32	7/16	13/32	3/8	11/32	5/16	9/32	1/4	7/32	3/16	5/32	1/8	3/32
1/16	$0.19	19½	19½	20	20	....	....	....	....	....	....	..	..	..	..	..	..	..
3/32	.19	19½	19½	20	20	21	....	....	....	....	....	..	..	..	..	..	..	..
11/32	.19½	20	20	20½	20½	21	21	....	....	....	....	..	..	..	..	..	..	..
3/16	.19½	20	20	20½	20½	21	22	22	22	....	....	..	..	..	..	..	..	..
1	.20	20½	20½	21	21	22	23	23	23	23	....	..	..	..	..	..	..	..
2	.20	20½	20½	21	21	22	23	23	23	23	24	..	..	..	..	..	..	..
3	.20	20½	20½	21	21	22	23	23	23	23	24	24	24	..	..	..	..	..
1/4	.20	20½	20½	21	21	22	23	23	23	23	24	24	24	25	25	..	..	..
4	.21	21½	21½	22	22	23	23	24	24	24	24	24	24	25	25	26	..	..
5	.21	21½	21½	22	22	23	24	24	24	24	25	26	26	27	27	28	28	29
6	.21	21½	21½	22	22	23	24	24	25	25	26	26	27	28	29	29	29	30
3/16	.21	21½	21½	22	22	23	24	24	25	25	26	26	27	28	29	30	31	32
7	.21	21½	22	23	23	24	24	24	25	25	26	26	27	28	29	30	31	32
8	.22	22½	22½	23	23	24	25	25	26	26	27	27	28	29	30	31	32	33
9	.23	23½	23½	24	24	25	26	26	27	27	29	29	29	30	31	33	35	36
10	.24	24½	24½	25	25	26	27	28	29	31	33	34	34	36	39	41	43	44
11	.25	25½	25½	26	26	28	30	32	33	34	36	37	37	39	43	46	48	51
12	.26	26½	26½	27	27	30	32	34	35	36	38	40	41	42	47	51	56	61
13	.30	30½	30½	31	31	33	36	39	40	41	43	45	46	47	51	56	61	66
14	.32	32½	32½	33	33	36	41	41	46	51	56	58	61	64	64	66	69	71

BOILER RIVETS

	Per 100 lbs.
5/8x1 inch and larger..........	Base
1/2x1 " " longer..........	$0.25 extra
5/8x3/4 and 7/8 inch..........	.50 "
1/2x3/4 " 7/8 "	.75 "

WASHERS



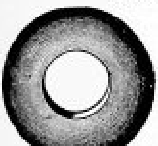
Cast Iron

For Bolt Inches	Diameter Inches	Price All Sizes
1/2	2½	per pound $0.05
5/8	3	
3/4	3	
7/8	3½	
1	4	
1⅛	4½	
1¼	5	
1½	6	
1¾	6	
2	6	

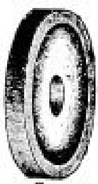
MALLEABLE IRON CLINCH RINGS

BLACK AND GALVANIZED

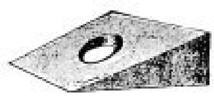
Countersunk Hole. 100 lb. Kegs



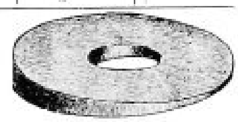
Size	1/2 inch	....	per lb.	$....
"	9/16	"	"	....
"	5/8	"	"	....
"	3/4	"	"	....
"	7/8	"	"	....
"	1	"	"	....
"	1¼	"	"	....
"	1½	"	"	....



Cup



Angle



Bevel

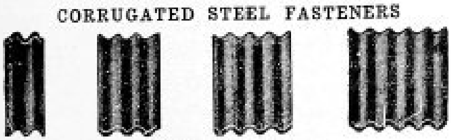
Cup, angle and bevel cast iron furnished to order only on receipt of specifications.

Wrought Washer

WROUGHT WASHERS

Diam. Inches	Hole Inches	Thickness of Wire Gauge	Bolt Inches	Price per lb. in 200-lb. Kegs	No. in 100 lbs.
9/16	1/4	No. 18	3/16	$0.14	35,200
3/4	5/16	" 16	1/4	.122	15,000
7/8	3/8	" 16	5/16	.114	11,900
1	7/16	" 14	3/8	.105	7,900
1¼	1/2	" 14	7/16	.097	4,500
1⅜	9/16	" 12	1/2	.092	3,100
1½	5/8	" 12	9/16	.091	2,156
1¾	11/16	" 10	5/8	.09	1,323
2	13/16	" 10	3/4		1,000
2¼	15/16	" 9	7/8		825
2½	1 1/16	" 9	1		637
2¾	1¼	" 9	1⅛		637
3	1⅜	" 9	1¼	.092	299
3¼	1½	" 8	1⅜		294
3½	1⅝	" 8	1½		244
3¾	1¾	" 8	1⅝		240
4	1⅞	" 8	1¾	.095	229
4¼	2	" 8	1⅞		82
4½	2⅛	" 8	2		

CORRUGATED STEEL FASTENERS



Per Thousand

Inches Deep	Number of Corrugations: 2	3	4	5	6	7
1/4	$0.45	$0.60	$0.75	$0.90	$1.10	$1.30
3/8	.55	.75	.95	1.20	1.40	1.60
1/2	.60	.85	1.05	1.30	1.50	1.80
5/8	.80	1.00	1.30	1.70	1.85	2.20
3/4	.90	1.15	1.45	1.85	2.15	2.50
7/8	1.00	1.35	1.75	2.20	2.55	3.00
1	1.15	1.45	1.85	2.40	2.85	3.35

COPPER CUT BOAT NAILS

In Bulk, and 25, 50, and 100 lb. Packages

Inches long	¾	⅞	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	5½	6
Penny			2	3	4	5	6	7	8	9	10	12	16	20	30	40	50	60
1 inch and longer base	per lb., $....																	
¾ " and ⅞, extra	" .00½																	

COPPER WIRE NAILS

In Bulk, and 25, 50, and 100 lb. Packages

Inches long	¾	⅞	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3¼	3½	4	4½	5	5½	6
Penny			2	3	4	5	6	7	8	9	10	12	16	20	30	40	50	60
1 inch and longer base	per lb., $....																	
¾ " and ⅞, extra	" .00½																	

COPPER BOAT TACKS

In 1-lb. Papers
FLAT HEAD

Inches long	⅜	7/16	½	⅝	¾	⅞	1	1⅛	1¼	1½	1¾	2
½ inch and longer base	per lb., $....											
⅜ and 7/16, extra	" .02											

5/16 inch, extra	per lb., $0.06
¼ " "	" .09
5/16 " "	" .13

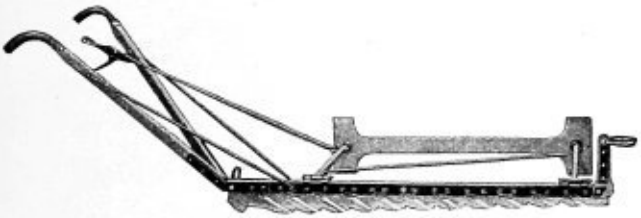
SWEDES IRON TACKS

Length, inches	7-16	8-16	9-16	10-16	11-16	12-16	13-16
Size, ounces	4	6	8	10	12	14	16
BLUED							
2 oz. pa. boxes, per doz.	$1.85	$1.85	$1.85	$1.85	$1.85	$1.85	$1.85
4 oz. " " "	3.50	3.50	3.50	3.50	3.50	3.50	3.50
¼ wt. "	1.25	1.55	1.85	2.15	2.45	2.75	3.05
½ " "	2.30	2.90	3.50	4.10	4.70	5.30	5.90
Bulk, per lb.	1.30	1.15	1.00	.95	.90	.85	.80
TINNED							
2 oz. pa. boxes, per doz.	2.45	2.45	2.45	2.45	2.45	2.45	2.45
4 oz. " " "	4.70	4.70	4.70	4.70	4.70	4.70	4.70
¼ wt. "	1.65	2.00	2.45	2.90	3.35	3.80	4.25
½ " "	3.10	3.80	4.70	5.60	6.50	7.40	8.30
Bulk, per lb.	1.85	1.55	1.40	1.35	1.30	1.25	1.20

WOOD'S ICE TOOLS

MARKER WITH SWING GUIDE

Weight, Complete with Case, 145 lbs.



No.		Each
355	4-inch Markers, 11 cutting teeth, with 22-inch Swing Guide, complete	$58.00
356	4-inch Markers, 11 cutting teeth, with 22-inch and 32-inch Swing Guides	66.00
359	4-inch Markers, 11 cutting teeth, with Patent Extension Swing Guide, 22 by 32 inches	61.00

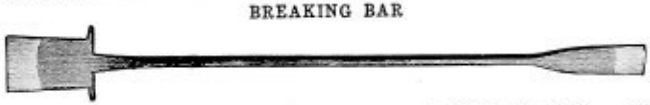
PLOWS

No.		Weight lbs.	Each
374	8-inch, 8 cutting teeth	115	$50.00
375	8 " 7 " "	115	48.00
376	9 " 7 " "	120	51.00
377	10 " 6 " "	125	53.00

SAWS

No.		Each	No.		Each
420	Ice Saws, 4 feet	$5.00	425	Ice Saws, 4 feet	$4.50
421	" " 4½ "	5.25	426	" " 4½ "	4.75
422	" " 5 "	5.50	427	" " 5 "	5.00
423	" " 5½ "	5.75	428	" " 5½ "	5.25

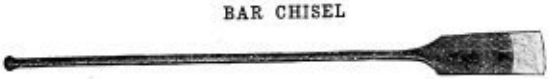
BREAKING BAR



Weight, 16½ lbs., length, 4 ft. 8 in.; pad, 7½ in.x4¾ in.; chisel blade, 2¾ in. wide.

No.		Each
454	Breaking Bars	$3.50

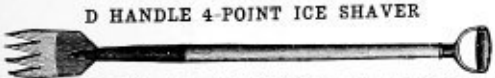
BAR CHISEL



Weight, 15½ lbs., length, 4 ft. 7 in.; blade, 12 in. x 4¾ in.

No.		Each
458	Bar or Packing Chisels, steel handles	$3.50

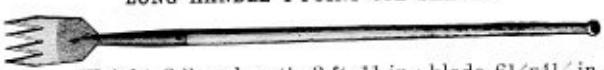
D HANDLE 4-POINT ICE SHAVER



Weight, 3¼ lbs.; length, 3 ft. 6 in.; blade, 6½x4¼ in. wide; long teeth; handle, 1¼ in. diameter.

No.		Each
653	D Handle 4-Point Ice Shavers, small blade (special teeth; 1¼-inch handle)	$1.75

LONG HANDLE 4-POINT ICE SHAVER



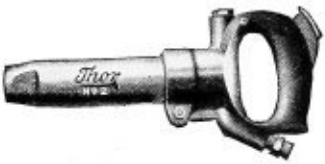
Weight, 3 lbs.; length, 3 ft. 11 in.; blade, 6½x4¼ in. wide; long teeth; handle, 1¼ in. diameter.

No.		Each
651	Long Handle 4-Point Ice Shavers, small blade (special teeth; 1¼-inch handle)	$1.75

TONGS

No.		Per doz.
540	Boston Tongs, solid handles, 13 in., 34 lbs. doz	$13.00
	" " " " 14½ " 39 " "	13.50
	" " " " 16½ " 46 " "	14.00
	" " " " 24 " 62 " "	16.00
	" " " " 26 " 68 " "	17.00

Thor PNEUMATIC TOOLS



CAPACITIES

CHIPPING AND CALKING

Size	Diam. of Piston Inches	Stroke Inches	Weight Pounds	Length Over All Inches	Cb. Ft. Free Air per Min.	Blows per Minute	Size Hose Required	Adapted to
No. 1	$1\frac{1}{16}$	1	8	$10\frac{1}{2}$	12	3000	$\frac{1}{2}$ in.	Very light chipping and scaling
No. 2	$1\frac{1}{16}$	2	9	$12\frac{1}{2}$	13	2000	$\frac{1}{2}$ in.	Light chipping, calking and beading flues
No. 3	$1\frac{1}{16}$	3	10	$14\frac{1}{2}$	14	1400	$\frac{1}{2}$ in.	General chipping and calking
No. 4	$1\frac{1}{16}$	4	11	$15\frac{1}{2}$	15	1000	$\frac{1}{2}$ in.	Heavy chipping and calking
No. 5	$1\frac{1}{16}$	5	12	$17\frac{1}{2}$	18	800	$\frac{1}{2}$ in.	Extra heavy chipping
No. 5 spec.	$1\frac{1}{8}$	5	13	$17\frac{1}{2}$	18	800	$\frac{1}{2}$ in.	Extra heavy chipping steel castings

In ordering Chipping and Calking hammers, specify whether round or hexagon nozzles are desired. Three chisel blanks furnished with each hammer.

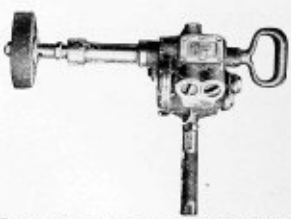
RIVETING

Size	Diam. of Piston Inches	Stroke Inches	Weight Pounds	Length Over All Inches	Cb. Ft. Free Air per Min.	Blows per Minute	Size Hose Required	Adapted to
No. 40	$1\frac{1}{16}$	4	13	$16\frac{3}{4}$	18	1000	$\frac{1}{2}$ in.	Driving rivets up to $\frac{1}{2}$ inch diameter
No. 50	$1\frac{1}{16}$	5	15	$18\frac{1}{2}$	18	800	$\frac{3}{4}$ in.	Driving rivets up to $\frac{5}{8}$ inch diameter
No. 60	$1\frac{1}{16}$	6	17	$16\frac{1}{2}$	20	900	$\frac{3}{4}$ in.	Driving rivets up to $\frac{3}{4}$ inch diameter
No. 80	$1\frac{1}{16}$	8	19	19	22	770	$\frac{3}{4}$ in.	Driving rivets up to $\frac{7}{8}$ inch diameter
No. 90	$1\frac{1}{16}$	9	21	$20\frac{1}{2}$	22	700	$\frac{3}{4}$ in.	Driving rivets up to $1\frac{1}{4}$ inch diameter

When ordering Riveting Hammers, indicate the sizes and style (button or cone head) of rivet sets required. Three rivet sets included with each riveter.

No. 5
Reversible Wood
Boring Machine

No. 10
Breast and
Screw-Feed
Drill

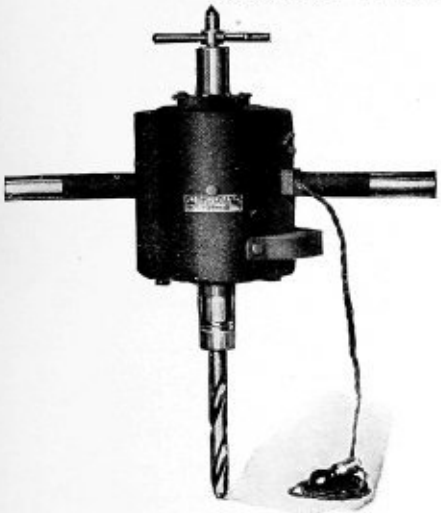


Pneumatic Portable Grinding Machine
No. 7. Weight 20 pounds.
Speed 3000 R. P. M.
Specially designed for Grinding, Polishing, Buffing, Etc.

Illustrated Catalogues describing these Tools in detail and prices on application.

WILLEY ELECTRICALLY DRIVEN TOOLS

SCREW FEED PORTABLE DRILL



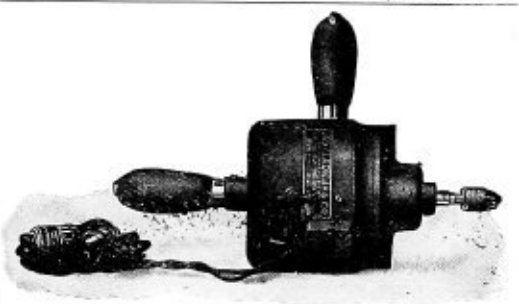
This machine has steel frame, ball thrust and all electrical parts completely enclosed and protected from injury. It is very powerful and is capable of drilling 1-inch holes in steel, or 1½-inch holes in cast iron. Capacity based on drilling holes in cast iron.

DIMENSIONS

Will drill up	1½ in.
Length of feed	1½ in.
No. 3 Morse taper in end of spindle.	
Weight of machine	65 lbs.
Weight of machine boxed for domestic shipment	80 lbs.
Weight of machine boxed for foreign shipment	90 lbs.
Length over all	18⅜ in.
Length over all of handles	24 in.
Diameter of frame	8⅝ in.
Dimensions of box for foreign shipment	12½x19x11½in.
Approximate speed of spindle	150 R. P. M.
Maximum horse power of motor	½
Wound for either 110 or 220 volts direct current.	
For direct current.....Each	$90.00

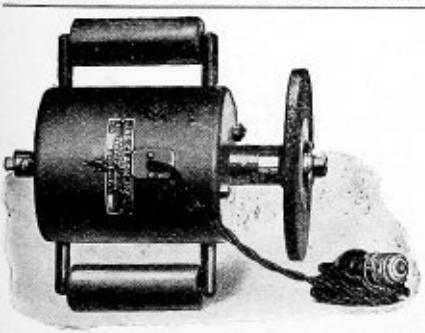
HAND DRILL

This machine is largely used by piano and organ makers, boat builders and others having a large number of small holes to drill in metal or wood. Its capacity is ⅛-inch holes in cast iron or 3/16-inch holes in hard wood. End handle can be changed to position opposite handle on top.



DIMENSIONS

Fitted with Jacobs' chuck, capacity of	0 to 3/16 in.
Weight of machine	9 lbs.
Weight boxed for domestic shipment	12 lbs.
Weight boxed for foreign shipment	15 lbs.
Dimensions of machine	12x4¾x4¾ in.
Dimensions of box for foreign shipment	9x6x6 in.
Speed approximately	3000 R. P. M.
Maximum horse power of motor	1/10
Wound for either 110 or 220 volts, direct or alternating current.	
For direct current.....Each	$30.00



HAND GRINDER AND BUFFER

A portable grinding machine, adapted not only for this but also for buffing, polishing, sanding, or smoothing down castings; different wheels being required for the different classes of work. Its weight is such as to allow of its being carried about from place to place, and is ready for use when plug is fitted to lamp socket. Operator can start and stop this tool instantaneously. The motor is completely housed, consequently is dust proof and all parts are made with care. Furnished with wheel as shown and extension taper shaft for buffing or polishing. Well adapted for polishing brass and other finished metals in office buildings, stores, and on automobiles, carriages, etc.

DIMENSIONS

Size of wheel	6x¾x¾	Dimensions of machine	5x9½x10½
Speed, approximately	4500 R. P. M.	Maximum horse power	¼
Weight of machine	16 lbs.	Wound for either 110 or 220 volts, direct current.	
Weight crated for domestic shipment	22 lbs.	For direct current.....Each	$35.00
Weight boxed for foreign shipment	22 lbs.		
Outside dimensions of box for foreign shipm't	6x10x12		

These machines can be furnished for alternating current. Prices on application.

TRUCKS

Warehouse and Store

These Trucks are made of the best second growth hickory, ash or oak lumber. Bolts pass through iron, tenons and handles. All steel parts are heavier than iron parts ordinarily used. Axle and collar forged from one piece of steel.

Half Ironed

HALF IRONED

Axles turned and wheels bored. Steel nose, side straps, axle and legs.

No.	Length of Handle	Width inches	Diameter of Wheel inches	Weight lbs.	Each
0	3 ft. 6 in.	19	6⅞	42	$6.00
1	3 " 11 "	19	6⅞	44	7.00
2	4 " 4 "	20	7¾	56	9.00
3	4 " 8 "	22	8¾	77	13.00

Full Ironed

FULL IRONED

Axles turned and Wheels bored. Steel nose, side straps, axle and legs.

No.	Length of Handle	Width inches	Diam. of Wheel, in.	Weight lbs.	Each
0	3 ft. 6 in.	19	6⅞	49	$7.00
1	3 " 11 "	19	6⅞	50	8.00
2	4 " 4 "	20	7¾	66	10.50
3	4 " 8 "	22	8¾	87	15.00

RAILROAD AND PACKING HOUSE

Full ironed, extra heavy. Cross-bars and straps bolted through handles. Axles turned and wheels bored. Steel nose, side straps, and axle.

No. 4. Length of handle, 5 feet; width, 24 inches; diameter of wheel, 10¾ inches; weight 120 lbs. ..... each $20.00

No. 5. Length of handle, 5½ feet; width, 25 inches; diameter of wheel, 12 inches; weight, 150 lbs. . . each 24.00

Railroad

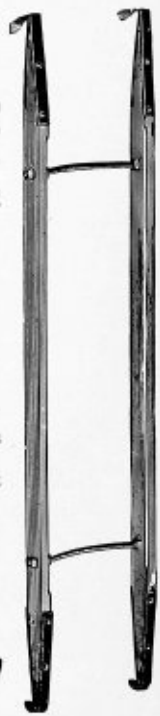
SKIDS

Price, light pattern . . . . per foot $1.00
" heavy " . . . . " 1.25

Length feet	Kind	Side Rails	No. of Cross Bars
6	Light	1¼x2¾	2
6	Heavy	1¾x3	2
7	Light	1¼x2¾	2
7	Heavy	1¾x3½	2
8	Light	1¼x2¾	3
8	Heavy	1¾x3½	3
9	"	1¾x3½	3
10	"	1¾x3¾	3
12	"	1¾x4	3

Any size under 6 feet, same price as 6 feet.

Our Skids are made of the best selected ash, oak, or hickory lumber.



BAG TRUCKS

With steam-bent handles, heavy cast iron nose.

No. 1. Length of handle, 42 inches; width at nose, 11¼ inches; width at upper bar, 16¾ inches; axle, ⅞ inch square; wheel, 6x1⅜ inches; weight, 29 lbs. ..... each $5.00

No. 3. Length of handle, 48 inches; width at nose, 15 inches; width at upper bar, 20½ inches; axle, 1 inch square; wheel, 6⅞x2 inches; weight, 58 lbs. ..... each 9.00

BOX TRUCKS

No.	Width inches	Length inches	Wheels inches	Weight lbs.	Each
1	18	18	4x1⅜	28	$5.00
2	18	26	4x1⅜	36	6.00

WAGON TRUCK

Steel Axles, Wheels Drilled, Axles Turned

						Each
No. 1.	Platform, 3x2 feet;			weight, 115 lbs.		$14.00
No. 2.	"	3 feet 2 ins.,	by 2 feet 2 ins.;		weight, 120 lbs.	15.00
No. 3.	"	3 " 4 "	" 2 " 4 "	"	126 "	16.00
No. 4.	"	3 " 6 "	" 2 " 6 "	"	131 "	17.50
No. 5.	"	3 " 8 "	" 2 " 8 "	"	136 "	18.50
No. 6.	"	3 " 10 "	" 2 " 10 "	"	141 "	20.00

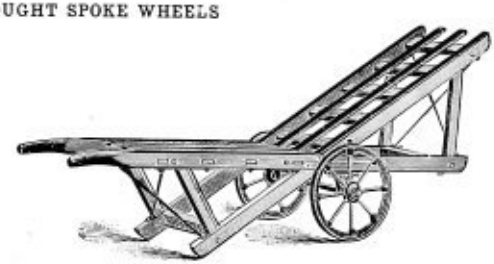
BAGGAGE BARROWS

IMPROVED STAGGERED WROUGHT SPOKE WHEELS

Curved Pattern

Painted, irons blacked.

No.	Length feet	Width inches	Wheel inches	Weight	Each
1	8	24	20x2	345	$40.00
2	10	27	20x2	356	45.00
3	13	29	20x2	425	55.00

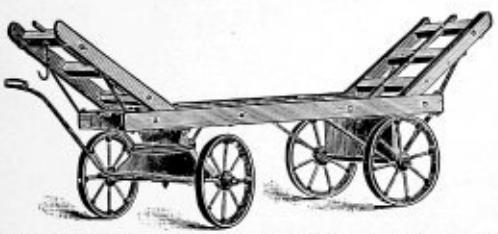


Sloping Back Pattern

Painted, irons blacked.

No.	Length feet	Width inches	Wheel inches	Weight	Each
1	7	24	17½x2	217	$33.00
2	9⅓	27	20 x2	300	40.00
3	9½	30	20 x2	340	55.00

EXPRESS AND BAGGAGE WAGONS

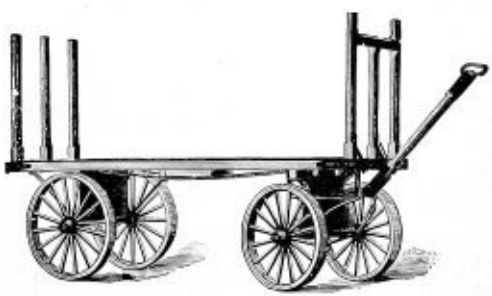


Baggage Wagon, with Improved Staggered Wrought Spoke Wheels, Steel Axles

Wrought iron fifth wheel, 20 inches in diameter.

Front wheels, 20 inches in diameter; rear wheels, 22 inches.

No. 1. Length 7 feet; width, 26 inches; dash, 28 inches long; weight, 475 lbs..... $70.00
No. 2. Length, 10 feet; width, 27 inches; dash, 35 inches long; weight, 600 lbs..... 80.00
No. 3. Length, 12 feet; width, 32 inches; dash, 44 inches long; weight, 725 lbs..... 90.00



Express Wagon, with "Sarven Patent" Wood Wheels, Steel Axles

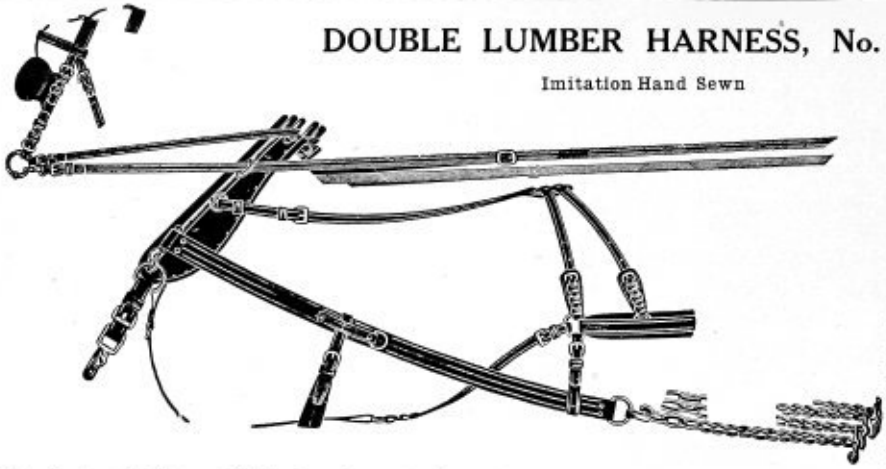
Also furnished with wood or American pattern iron wheels.

Wrought iron fifth wheel, 20 inches in diameter.

Front wheels, 28 inches in diameter; rear wheels, 31 inches in diameter. Platform, 10 feet long, 39 inches wide, 35 inches high. Weight, 670 lbs. $100.00

DOUBLE LUMBER HARNESS, No. 126

Imitation Hand Sewn



Bridles. ⅞ inch Concord blinds, flat winker stays and reins.
Hames. No. 10, Concord bolt, 1¼ inch hame straps.
Breeching. Folded, 1½ inch layers; side straps 1¼ inch; back straps 1¼ inch, double, running to rings in hames; hip straps 1¼ inch, double.
Traces. Three rows stitching, channeled on under side, with hooks and dees, grab link chains, 2, 2¼, or 2½ inch; 4 feet 8 inches, 5 feet 4 inches, or 6 feet.
Lines. 1⅛ inch, 20 feet, with snaps.
Martingales. 2 inch.
Breast Straps. 2 inch, with rollers and snaps.
Collars. No. 16, Dray.

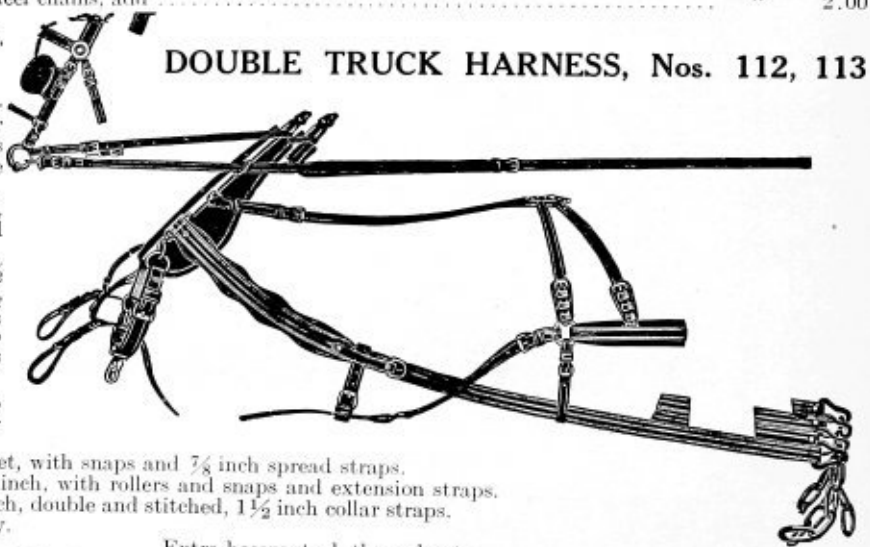
Extra heavy stock throughout.

Japanned, with 2¼-inch by 5 feet 4 inch traces	per set, $81.00
" " 2½ " 5 " 4 "	" 83.50
Less collars, deduct	" 13.25
With traces 4 feet 8 inches, deduct	" 1.25
" " 6 " with heel chains, add	" 2.00

DOUBLE TRUCK HARNESS, Nos. 112, 113

DOUBLE TRUCK HARNESS, No. 112
Imitation Hand Sewed

Bridles. ⅞ inch, Concord blinds, round winker stays, short cheeks, brass fronts and rosettes, nose bands.
Hames. No. 10, red, Concord bolt, brass ball top.
Breeching. Folded, 1½ inch layers; side straps, 1¼ inch; back straps 1⅛ inch, double, running to rings in hames; hip straps 1⅛ in. double.
Traces. 1¾ inch, double, three rows stitching, with heel chains.
Lines. 1 inch, 18 feet, with snaps and ⅞ inch spread straps.
Breast Straps. 1¾ inch, with rollers and snaps and extension straps.
Martingales. 1½ inch, double and stitched, 1½ inch collar straps.
Collars. No. 5, Dray.



Extra heavy stock throughout.

Japanned, with 1¾ inch double by 6 foot traces with heel chains ..... per set, $87.25
" less collars ..... per set $74.00 For tubular hames, add ..... " 7.50

DOUBLE TRUCK HARNESS, No. 113.—Imitation Hand Sewed

Bridles. ⅞ inch, Concord blinds, round winker stays, short cheeks, brass fronts and rosettes, nose bands.
Hames. No. 10 red, Concord bolt, brass ball top.
Breeching. Folded, 1½ inch layers; side straps 1¼ inch; back straps 1¼ inch, double, running to rings in hames; hip straps 1¼ inch, double.
Traces. 2 inch, double, three rows stitching, with heel chains.
Lines. 1⅛ inch, 18 feet, with snaps, ⅞ inch spread straps.
Breast Straps. 1¾ inch, with rollers and snaps and extension straps.
Martingales. 1½ inch, double and stitched 1½ inch collar straps.
Collars. No. 5, Dray.

Extra heavy stock throughout.

Japanned, with 2 inch double by 6 foot traces with heel chains ..... per set, $93.25
" less collars ..... per set $80.00 For tubular hames, add ..... " 7.50

MARTINGALES

No. 609. Cut 4¾ feet, double at buckle end, ring in loop, extra heavy. 1½, 1¾ and 2 inch, XC or japanned.

1½ inch,	per	doz.	pairs,	$26.90
1¾ "	"	"	"	31.20
2 "	"	"	"	35.80

BREAST STRAPS

No. 601. Made up 5 feet, extra heavy, 1½, 1¾ and 2 inch, japanned.

1½ inch,	per	doz.	pairs,	$24.60
1¾ "	"	"	"	29.20
2 "	"	"	"	33.70

HAME STRAPS

Size, inches	¾	⅞	1	1⅛	1¼
No. 621. Sewed, japanned, 21 inches long, per doz.	$2.06	$2.34	$2.66	....	$3.56
No. 621½. Sewed, japanned, 24 inches long, per doz.	2.26	2.56	2.94	$3.44	3.78
No. 622. Sewed, japanned, extra heavy, 30 inches long, per doz.	....	3.40	3.80	4.30	4.80

BREECHING SIDE STRAPS

Size, inches	⅞	1	1¼
No. 332. XC or japanned, made up 5 feet 3 inches, per doz. pairs	$14.00	16.60	20.00

HALTERS

Nos. 474-474½

No. 474.	Riveted,	5 ring,	no tie;	1, 1¼, 1½ in.
No. 474½.	"	5 "	with tie;	1 and 1¼ in.
No. 478.	Mach. sewed,	5 ring,	no tie.	
No. 478½.	"	5 "	with tie.	
No. 479.	"	6 "	no tie,	1, 1¼, 1½ in.
No. 479½.	"	6 "	with tie,	1 and 1¼ in.

Size, inches	1	1¼	1½
No. 474. Per doz.	$12.60	$14.70	$18.25
No. 474½. "	19.20	22.30	.....
No. 478. "	17.40	20.20	23.80
No. 478½. "	25.30	29.60	.....
No. 479. "	17.40	20.20	23.80
No. 479½. "	25.30	29.60	.....

Nos. 478-479½

HALTER STRAPS

Size, inches	1	1¼
No. 472. 7 feet, buckle and billets, per doz.	$7.90	9.60

HARNESS LEATHER

Oak Tanned, light, medium, heavy.....per lb., $....

WOOL SHEEPSKINS

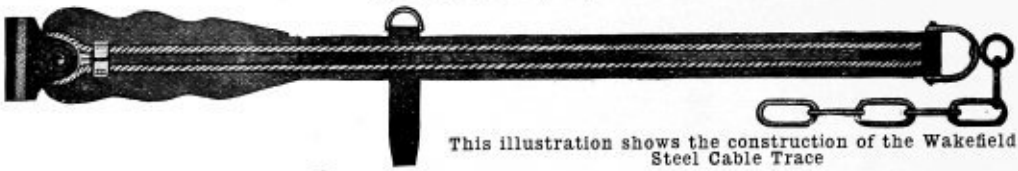
Extra yellow wool.....per doz., $....
Extra white wool.....per doz., ...

CHECK LINES

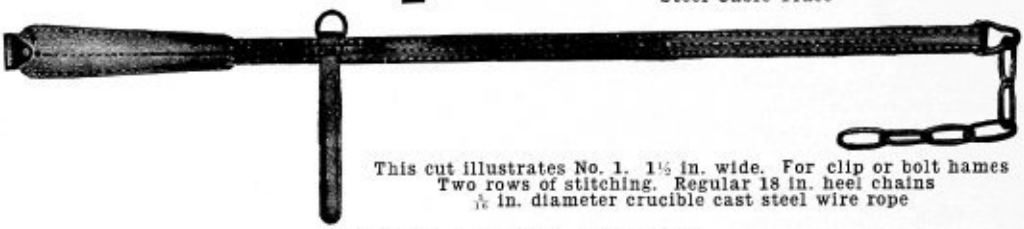
Size, inches			⅞	1	1⅛
No. 447. 18 feet, XC or japanned	per doz. pairs,		$54.20	$60.50	$68.60
No. 448. 20 " " "	"	"	59.00	66.50	74.00
No. 449. 22 " " "	"	"	62.00	72.00	80.00

WAKEFIELD STEEL CABLE TRACES

Patented February 21, 1905



This illustration shows the construction of the Wakefield Steel Cable Trace



This cut illustrates No. 1. 1½ in. wide. For clip or bolt hames
Two rows of stitching. Regular 18 in. heel chains
⅜ in. diameter crucible cast steel wire rope

HEAVY TRUCK TRACES

⅜ INCH DIAMETER GALVANIZED CRUCIBLE CAST STEEL CABLE

No.	Width	Length	Price per set of four Traces	No.	Width	Length	Price per set of four Traces
1	1½ inch	6 feet	$24.00	1A	1¾ inch	6 feet	$25.00
1	1½ "	6 " 2 inches	24.30	1A	1¾ "	6 " 2 inches	25.30
1	1½ "	6 " 4 "	24.50	1A	1¾ "	6 " 4 "	25.50
1	1½ "	6 " 6 "	24.80	1A	1¾ "	6 " 6 "	25.80
1	1½ "	6 " 8 "	25.00	1A	1¾ "	6 " 8 "	26.00
1	1½ "	6 " 10 "	25.50	1A	1¾ "	6 " 10 "	26.50
1	1½ "	7 "	26.00	1A	1¾ "	7 "	27.00

No. 1 traces have two rows of stitching and are fitted with Concord clevis and six links of chain and 1½ inch billets. For any style hame.

No. 1A traces have three rows of stitching and are fitted with Concord clevis and six links of chain and 1½ inch billets. For any style hame.

EXTRA HEAVY TRUCK TRACES

⅜ INCH DIAMETER CRUCIBLE CAST STEEL CABLE

No.	Width	Length	Price per set of four Traces
1B	2 inches	6 feet	$27.50
1B	2 "	6 " 4 inches	28.00
1B	2 "	6 " 6 "	28.50
1B	2 "	6 " 10 "	30.00

LUMBER TRACES

⅜ INCH DIAMETER CRUCIBLE CAST STEEL CABLE

No.	Width	Length	Price per set of four Traces
2	1½ inch	4 feet 8 inches	$23.00
2	1½ "	5 "	23.50
2	1½ "	5 " 4 "	24.00
2	1½ "	5 " 8 "	24.50
2	1½ "	6 "	25.00
2A	1¾ "	4 " 8 "	24.50
2A	1¾ "	5 "	25.00
2A	1¾ "	5 " 4 "	25.50
2A	1¾ "	5 " 8 "	26.00
2A	1¾ "	6 "	26.50

No. 1B traces have three rows of stitching and are fitted with Concord clevis and six links of chain and 1¾ inch billets. For any style hame.

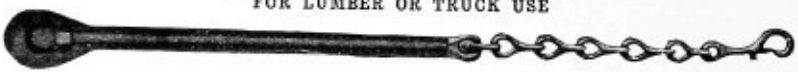
No. 2 traces have two rows of stitching. No. 2A, three rows. Both are fitted with wrought iron hook and malleable "D," with 1½ inch single billets on the No. 2 traces and 1½ inch double billets on the No. 2A. No chains.

All Wakefield trace length measurements are exclusive of chains, which are 18 inches long.

Concord clevis or swivel "D" furnished on truck traces as desired.

HEAVY MARTINGALES

FOR LUMBER OR TRUCK USE

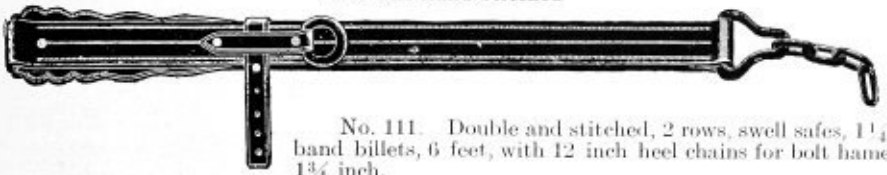


No. 40. 1⅜ inch wide, 28 inches long, 5/16 inch Cable, 42 inches full length.....per doz., $30.00
" 40A. 1⅜ " " " " 5/16 " " 42 " " " 1½ in. Collar Strap.. " 35.00

Both styles are fitted with 14 inch chains and Imperial snap.

TRUCK TRACES

Imitation Hand Stitched



No. 111. Double and stitched, 2 rows, swell safes, 1¼ inch belly-band billets, 6 feet, with 12 inch heel chains for bolt hames; 1½ and 1¾ inch.

No. 112. Double and stitched, 3 rows, swell safes, 1½ inch belly-band billets, 6 feet, with 12 inch heel chains, for bolt hames; 1¾ and 2 inch.

Size, inches	1½	1¾	2
No. 111. Per set	$17.20	$19.00	....
No. 112. "	....	23.50	$26.30

LUMBER TRACES

Imitation Hand Stitched

No. 126. 2, 2¼ and 2½ inch, 4 feet 8 inches, dees and hooks.

Size, inches	2	2¼	2½
No. 126. Per set	$20.00	22.00	24.00

Feltless

SWEAT PADS

Feltless

Yellow Drill, pinked Felt Edges. 4 Hooks.

11 inch.... per doz., $6.50

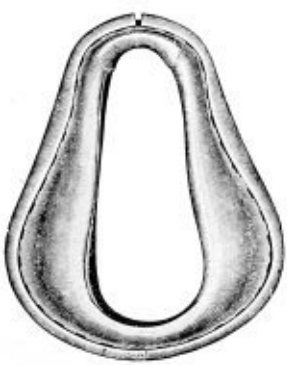
No. 142. Brown and White Drill. 3 Hooks.

10 inch.... per doz., $3.90
12 " .... " 4.60

No. 142

COLLARS

No. 20. Genuine Scotch case, curled hair faced.
No. 21. Genuine Scotch case, curled hair faced, extra heavy.



No. 15. Liverpool Dray, extra heavy.
No. 22. Liverpool genuine Scotch case, curled hair faced, extra heavy.

No. 5. Dray, heavy.
No. 16. Dray, extra heavy.

Size, inches	17 to 22	23	24
No. 5. Per dozen	$67.00	Add	Add
" 16. "	77.00	12½%	20%
" 15. "	77.00	to	to
" 20. "	94.00	List	List
" 21. "	102.00	Prices	Prices
" 22. "	104.00		

COMMON SENSE SOLE LEATHER COLLAR PAD

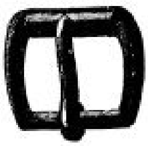
No. 3.	For heavy Team Collars	per doz..	$4.90
No. 4.	" " Truck "	" ..	5.20
No. 5.	" Lumbering "	" ..	6.25

HARNESS AND BREECHING RINGS

Size, inches	1¼	1½	1¾	2	2½	3
Japanned, per gross,	$1.70	2.40	2.70	4.60	7.50	8.40

HARNESS BUCKLES

Japanned



Barrel Roller Pattern

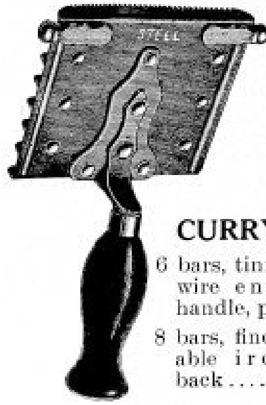
Size, inches	¾	⅞	1	1⅛	1¼	1½	1¾	2
Per gross..	$1.18	1.44	1.66	1.86	2.30	2.75	3.50	4.20

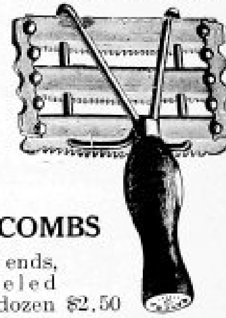
SNAPS

Bronzed German, for Leather

Size, in.	¾	⅞	1	1⅛
Per gro.	$3.10	3.10	3.10	3.50
Size, in.	1¼	1½	1¾	2
Per gro.	$5.40	7.10	9.30	10.80

German, for Leather





CURRY COMBS

6 bars, tinned ends, wire enameled handle, per dozen $2.50

8 bars, fine heavy steel, malleable iron frame, closed back $3.50

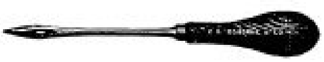
HARNESS TOOLS

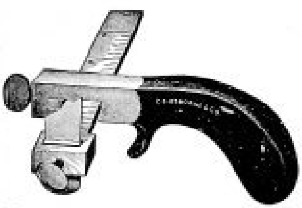
These Tools are made of the best Steel

No. 6. Thong Awls...each, $0.27

No. 5. Thong Awls riveted each .... .50

No. 5. Drawing Awls each $0.39



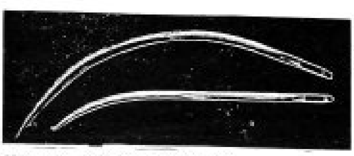


No. 51½. Patent hollow handle Draw Gauges, each $1.17

Patent hollow handle Draw Gauges, improved ..each, 1.34

Nickel plated handle Draw Gauges, improved each 2.00

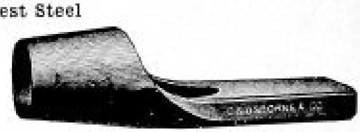
No. 76. Square point knives, round handles each $0.25



No. 92. Collar Needles each $0.13

No. 94. Cutting Nippers

		Each
Extra quality,	5 in.	$1.25
" "	6 "	1.67
" "	7 "	2.00
" "	8 "	2.50



No. 148. Round Punches

	Each		Each
Large, ⅝ inch hole.	$1.25	Large, 1⅜ inch hole	$2.50
" ¾ "	1.50	" 1½ "	2.75
" ⅞ "	1.50	" 1⅝ "	3.25
" 1 "	1.75	" 1¾ "	3.75
" 1⅛ "	2.00	" 1⅞ "	4.25
" 1¼ "	2.25	" 2 "	4.75

No. 79. Cap Knives, round handles ..each $0.25

No. 70. Round Knives.

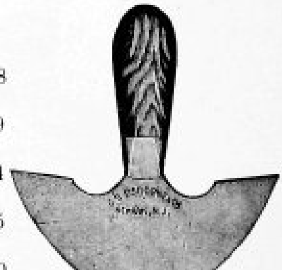
Small, oval handles, 5 inch ......each, $1.38

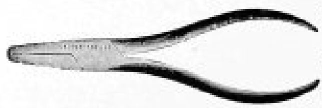
Usual, oval handles, 6 inch ......each, 1.59

X, oval handles, 6¾ inch.........each, 1.84

XX, oval handles, 6¾ inch....each, 2.25

XXX, oval handles, 7 inch.......each, 2.50





No. 98. Saddlers' Steel Plyers

5 inch	....each,	$0.50
6 "	.... "	.59
7 "	.... "	.67

PAINTS

READY FOR USE

Especially prepared for vessels, bridges, factories.

WEATHERPROOF WHITE ENAMEL

For use where a gloss finish of great beauty and extreme durability is wanted.

In 1 gallon cans	price,	$4.00
" ½ " "	"	2.20
" ¼ " "	"	1.20

CHINA GLOSS

Is intended for giving interiors a porcelain-like finish and should be used as a final coat only, over a properly prepared ground.

In cases of six 1 gallon cans	price,	$15.00
" 1 gallon cans	"	2.50
" ½ " "	"	1.30

YACHT WHITE

Our own brand.

A scientifically prepared machine mixed paint, composed of pure white lead and pure zinc white combined in such proportions as to insure the greatest durability.

In cases of six 1 gallon cans	price,	$10.00
" 1 gallon cans	"	1.75
" ½ " "	"	.90
" ¼ " "	"	.50
" ⅛ " "	"	.30

MARINE WHITE

A good, honest, reliable snow-white paint for outside purposes.

In 5 gallon cans	per gal.	$1.40
" 1 " "	"	1.45

INSIDE WHITE

A strictly pure paint for interior work, posessing good body and wearing qualities.

In cases of six 1 gallon cans	price,	$7.50
" 1 gallon cans	"	1.30
" ½ " "	"	.70

WEATHERPROOF BLACK ENAMEL

Identical in quality and description with our weatherproof white enamel. This paint to be had also in mahogany color.

In 1 gallon cans	price,	$4.00
" ½ " "	"	2.20
" ¼ " "	"	1.20

Mahogany color, $1.00 per gallon extra.

YACHT BLACK

Our own brand.

Similar in quality and description with yacht white.

In 1 gallon cans	price,	$1.50
" ½ " "	"	.80
" ¼ " "	"	.45

MARINE BLACK

A pure semi-gloss black paint, in general use by the steamships plying the Great Lakes.

In 5 gallon cans	per gal.	$1.30
" 1 " "	"	1.35
" ½ " "	each	.70

MARINE LEAD COLOR

Flows freely, has great covering capacity, and is in general use for vessels.

In 5 and 3 gallon kits	per gal.	$1.40
" 1 gallon cans	"	1.45

G. B. C. & CO.'S MARINE GREEN

A strong green It is as permanent as any chrome green and will give excellent satisfaction.

In 5 gallon cans	per gal.	$1.60
" 1 " "	"	1.65
" ½ " "	each	.85

GEO. B. CARPENTER & CO.'S PAINT FOR GENERAL USE

Black, Light Blue, Dark Blue, Brown, Light Brown, Buff, Light Straw, Light Buff, Green, Light Drab, Medium Drab, Dark Drab, Quaker Grab, Dark Straw, Light Quaker Drab, Gray, Apple Green, Bronze, Light Olive Green, Dark Olive Green, White, Light Lead, Medium Lead, Dark Lead, Maroon, Olive Tint, Medium Olive, Colonial Yellow, Red, Salmon, Spruce, Stone, Light Green Stone, Medium Green Stone, Vermilion.

In cases of six 1 gallon cans, single 1 gallon, ½ gallon and ¼ gallon cans.

Vermilion	per gal.	$2.00
Light, Medium and Dark Greens	"	1.75
Yellow	"	1.35
All other colors	"	1.30

FLOOR AND DECK PAINTS

In Brown, Buff, Venetian Red, Spruce, Dark and Light Stone and Drab.

In 5 gallon kits	each	$5.65
" cases of six 1 gallon cans	case	7.00
" 1 gallon cans	each	1.20
" ½ " "	"	.65

GEO. B. CARPENTER & CO.'S CEMENT PAINT

Without exception the best mineral paint made Venetian Red, Lead Color, and Yellow.

In barrels of 50 gallons	per gal.	$0.65
" " 30 "	"	.70
" 5 gallon kits	"	.75
" 1 " cans	each	80

HEAT PROOF PAINTS

ALUMINUM

A brilliant aluminum paint forming a coating of non-corrosive metal on metal. Of great durability, it will not scratch nor mar, and will cover about 750 square feet to the gallon. It is adopted by the U. S. Government and is used on letter boxes, etc.

In 1 gallon cans	each,	$4.25
" ½ " "	"	2.25
" 1 quart "	"	1.20
" 1 pint "	"	.65
" ½ " "	"	.40
" ¼ " "	"	.25

TUSCAN RED, WHITE, BRONZE BROWN

Prepared especially for use on the surface of steam engines, registers and similar surfaces which are heated to unusual temperatures. They may be depended upon to hold color up to a temperature of 300° F.

Price per gallon $2.50

PAINTS

READY FOR USE

HARRISON'S RUST-PROOF PAINT

Anti Rust is not an ordinary oil paint, but is designed, as its name implies, to protect metal surfaces from rust. If applied according to directions it forms a glossy, hard enamel-like coating which is impervious to moisture or destructive gases. Applied over red lead it is a perfect protection against rust. Made in four colors, Black, Red, Maroon, and Bronze Green. In 10 gallon, 5 gallon, and 1 gallon cans per gal.,$2.00

LIQUID WOOD FILLER

In 1 gallon cans	each,	$1.50
" ½ " "	"	.80
" ¼ " "	"	.45

INLAND LAKE ELASTIC SEAM COMPOSITION AND ELASTIC SEAM PAINT

For deck and all other seams, or for any place where a perfectly tight joint is wanted. It does not become hard, swelling and shrinking with the wood and iron. One hundred pounds of seam composition will fill 3,000 feet of a seam ¼ inch wide and ¼ inch deep, for which two gallons of Elastic Seam Paint is required.

Composition in 25 and 12½ lb. cans	per lb.,	$0.13
" " 5 " 2 " "	"	.16
Paint in ½ gallon cans	each,	$1.20
" " ¼ " "	"	.65
" " ⅛ " "	"	.45
" " 1/16 " "	"	.30

OIL STAINS

Ash, Cherry, Dark and Light Oak, Mahogany, Rosewood, and Walnut.

In 1 gallon cans	each,	$1.75
" ½ " "	"	.90
In ¼ gallon cans	"	$0.50

PAINTS

GROUND IN OIL

G. B. C. & Co.'s BRAND MARINE PAINT

We recommend these paints, being the cheapest and most durable, for vessel use.

In 25 lb. cans only.

Black	per lb.,	$0.06½
Green	"	.08
Blue	"	.08
Red Oxide	"	.06½
Brown Oxide	"	.06½
Venetian Red	"	.05½
Mast Color	"	.07½
Indian Red	"	.07
Burnt Umber	"	.06½
Tuscan Red	"	.09

WHITE LEAD

Strictly Pure	per lb.,	$....
Columbia	"	....

In 12½, 25, 50, 100 lb. kegs.

WHITE ZINC

French, Paris brand, green seal, in 25 lb. tin pails	per lb.,	$....
French, Paris brand, red seal, in 25 lb. tin pails	per lb.,	....
American, snow white, in 25 lb. tin pails	"	....

DRY COLORS

We carry a large and varied stock in the different shades of

English Vermilion,	Iron Ores,
American Vermilion,	Yellow Ochre,
Ultramarine Blue,	Germantown Lampblack,
Chrome Green,	Carbon Black,
English Venetian Red,	Red Lead,
Prince's Mineral,	White Lead and Zinc White.

COLORS GROUND IN OIL

	1-2-5 lb. Cans, per lb.	25 lb. Pails, per lb.
GREEN		
Chrome	$0.12½	$0.10
Bronze, light or dark	.16	.15
Paris	.21	....
Verdigris	.35	....
RED		
Venetian, bright or dark	.10	.08
Indian, pale or deep	.15	.14
Tuscan	.20	.19
Turkey	.17	.16
VERMILION		
American, pale or deep	.18	.17
French	.30	....
English	1.00	....
YELLOW AND ORANGE		
Chrome	.20	....
Canary	.30	....
Orange, Mineral (ground to order)	...	....
OCHRE		
French	.12	....
Oxford	.12	....
Golden, pale or deep	.12	....
Yellow Oxide	.14	....
BLACK		
Coach	$0.20	....
Drop	.20	....
Lamp	.18	$0.16
Velvet	.20	....
Columbia	..	.05½
Steamship	..	.10½
BLUE		
Chinese, in ¼, ½ and 1 lb.	.50	....
Prussian, in ¼, ½ and 1 lb.	.45	....
Ultramarine, in ¼, ½ and 1 lb.	.20	....
BROWN		
Umber, burnt	.15	....
" raw	.15	....
Sienna, burnt	.20	....
" raw	.20	....
Vandyke	.15	....
GRAINING COLORS		
Ash	.15	....
Chestnut	.15	....
Oak, light or dark	.15	....
Mahogany	.15	....
Walnut	.15	....
WHITE		
Green Seal French Zinc, in White Damar Varnish	.20	....
White Lead, "Best"	.10	....

DIXON'S SILICA-GRAPHITE PAINT

Economical for Priming and Finishing Boats for all Classes of Steel and Steel Construction

Dixon's Flake Graphite as a paint pigment, being inert, forms with linseed oil an elastic instead of a hard and brittle coating. Flake Graphite is a lubricant, and this lubricating property insures thorough application, as well as saving in labor and brushes. Dixon's Silica-Graphite Paint will not crack nor blister, is suited to all climates, readily covers other paints and is the most durable protective coating known.

We recommend no lighter colors than Olive Green, Natural, Dark Red and Black, as the Graphite Pigment is a Dark Gray, and coloring pigments other than to produce these colors lessen the wearing qualities of Graphite Paint. The Black is especially prepared for steel smokestacks, boiler fronts, ornamental iron work, and surfaces subjected to sulphurous fumes.

SPECIFICATIONS FOR STEEL AND IRON CONSTRUCTION WORK

At the Mill.—Before painting all surfaces must be thoroughly cleaned, freed from loose scale, dirt and moisture. The entire surface shall then be given a well-applied coating of Dixon's Silica Graphite Paint, Dark Red. Parts to be in contact and closed, shall receive before assembling a coat of the same material.

After Erection.—Places damaged by abrasion shall first be retouched. The entire work shall then be given a second coat of Dixon's Silica-Graphite Paint, of a different color than the mill coat.

The top of the package to be removed, and the paint properly stirred. No adulterating oils or thinners shall be used. The cleaning, painting and materials to be subject to inspection.

The paint to be furnished to the mill and building site, in original packages, READY MIXED for use.

SPECIFICATIONS FOR STEEL AND IRON MAINTENANCE WORK

Cleaning.—All broken or blistered paint, all rust, grease and dirt, must be removed by wire brushes, scrapers, blow torch, or by sand blasting with fine sand. The method to be selected and made part of the contract. Surfaces must be painted the day they are cleaned.

Repainting.—All surfaces shall be given two thorough coats of Dixon's Silica-Graphite Paint. The second coat to be applied only when the first is thoroughly dry, and to be of a different color. Surfaces must be perfectly dry when painted. The best round bristle brushes to be used.

The top of the package to be removed, and the paint properly stirred. No adulterating oils or thinners shall be used. The cleaning, painting and materials to be subject to inspection. Paint to be furnished in original packages, READY MIXED for use.

THINNED, READY MIXED

½ gal. in pail	$1.60 per gal.	10 gals. in keg	$1.40 per gal.
1 " " "	1.50 " "	25 gals. in ½ bbl	1.35 " "
5 gals. in keg	1.45 " "	Bbl. (about 50 Gals.)	1.30 " "

Dixon's paint is sold only ready mixed, not in paste form.

COPPER PAINTS

For the Bottoms of Yachts and Vessels

Brand	Qts.	½ Gals.	Gals.
Jestey's Anti-Fouling Red	$1.80	$3.75	$7.00
Inland Lake Composite, Green, Red	.70	1.30	2.50
Terr & Wonson's Racing Compound	.80	1.55	3.00
New Jersey Red and Green	.80	1.55	3.00
Laezone	.....	1.80	3.50

DIXON'S POT LEAD AND EUREKA COMPOUND

Directions for Applying Pot Lead to Yacht Bottoms

The bottom should first be freed from dirt, grease, etc. When fairly dry, apply "Eureka" as you would a priming coat of paint, and while still wet sprinkle the surface very thickly with the Pot Lead, rub in with a swab or glove and continue to apply elbow grease until you have a dry, smooth, glossy, glass-like surface. It is well to bear in mind that Pot Lead can be applied over paint, but paint will not adhere to Pot Lead.

Pot Lead in 5 lb. cans	per lb.,	$0.40
" " " 1 " "	"	.50
Eureka Compound	per gallon,	1.00

SHELLAC VARNISHES

Grain	Alcohol	Orange	Shellac	per gallon	market
Wood	"	"	"	"	"
Grain	"	White	"	"	"
Wood	"	"	"	"	"
Grain	"	Brown	"	"	"
Wood	"	"	"	"	"

VARNISHES

Brand	Qts.	½ Gals.	Gals.
Navalite Spar Varnish	$1.10	$2.10	$4.00
Crockett's " "	1.10	2.10	4.00
" Nos. 1 and 2 Preservative	.75	1.35	2.50
Inland Lake Spar Varnish	.95	1.80	3.50
" No. 1 Coach Varnish	.50	.90	1.65
White Damar Varnish	.65	1.10	2.00
Hard Oil	.60	1.05	2.00
Bright Varnish	.....	.....	.75
Brown Japan	.40	.70	1.25
Inland Lake Black Varnish	.....	.55	1.00
Asphaltum	.35	.55	1.00
Adelite Paint and Varnish Remover	.70	1.35	2.50

OILS, JAPANS, ETC.

Linseed Oil, boiled	per gal.,	market
" " raw	"	"
Spirits of Turpentine	"	"
Japan Dryer, Best	"	"
" " Standard	"	"
Oil of Tar	"	"

VALSPAR.—A finish for all exterior wood and iron work on vessels and other surfaces exposed to weather, per gal., $4.50

VERMOSITE.—For vessel and yacht bottoms. Will dry quickly, per gal., $4.00

ALCOHOL

Wood and Grain in 5 gallon, 1 gallon, ½ gallon and ¼ gallon cans. Market price.

JEFFERY'S PATENT MARINE GLUE

GUARANTEED TO BE WATERPROOF

Its peculiar properties are those of flexibility and durability, and although it becomes soft and pliant under heat, it still retains its adhesion to timber, fiber, etc., and is clean and insoluble in water.

No. 1 BLACK, WHITE OR YELLOW YACHT GLUE

Extra Quality

For Deck and Hull Seams of Yachts and Boats

1 lb.	2 lb.	3 lb.	5 lb. Cans	14, 28, 26, 112 lb. Boxes
$0.30	.60	.85	1.40 Each	.25 per lb.

No. 2. BLACK OR YELLOW SHIP GLUE

First Quality

For Deck and Hull Seams of all Classes of Vessels

1 lb.	2 lb.	3 lb.	5 lb. Cans	14, 28, 56 112 lb. Boxes
$.25	.50	.70	1.15 Each	.20 per lb.

No. 7. BLACK GLUE

Soft Quality

Used largely by manufacturers of knock-down boats.

Also used in combination with canvas for decks and canvas boats and canoes, and in combination with calico for sponsons.

It is invaluable for quick repairs.

1 lb.	2 lb.	3 lb.	5 lb. Cans	14, 28, 36 112 lb. Boxes
$0.30	.60	.85	1.40 Each	.25 per lb.

No. 10. BLACK GLUE

Soft Quality

Very elastic, especially recommended for joining Hollow Spars.

1 lb. cans.....each, $0.60

LIQUID MARINE GLUE

C Quality

For attaching floor cloths, canvas, rubber, leather, and linoleum to iron, steel and wooden decks. One gallon will cover about 10⅔ square yards.

¼ Pts.	½ Pts.	Pts.	Qts.	½ Gals.	Gals.	5 Gal. Cans.
$0.25	.35	.60	1.10	2.10	4.00	3.50 per gallon

MARINE GLUE THINNER

For Thinning Only

½ Pts.	Pts.	Qts.	½ Gals.	Gal. Cans
$0.25	.40	.75	1.35	2.50 Each

JOINT SOLUTION

For Uniting Surfaces of Glue in Jointing Spars, etc.

¼ Pts.	½ Pts.	Pts.	Qts.	½ Gals.	Gal. Cans
$0.25	.35	.60	1.10	2.10	4.00 Each

Full directions as to uses for which it is intended and method of melting and applying on each can. When ordering always give numbers and colors, and state the use for which it is intended.

20th CENTURY GLUE CEMENT

READY FOR USE

Waterproof. Not Affected by Heat or Cold

Marine Grade

For attaching Cork, Canvas, Felt, Oil-Cloth Rubber, Leather and Linoleum to Iron, Steel, Wood or Stone. Especially adapted for attaching Canvas and Linoleum to Wooden and Steel Decks; Asbestos to Brick and Stone; Tiles to Portland Cement; Repairing Stone and Crockery Ware, Granite, Marble and Terra Cotta.

A Grade for attaching Linoleum to Cement Floors.
B Grade for attaching Linoleum to Wooden Floors.

PRICE LIST

Size of Cans,	Pints	Quarts	Half Gals.	Gals.
Marine.....each	$0.60	$1.10	$2.10	$4.00
A..... "	.60	1.10	2.10	4.00
B..... "	.40	.75	1.35	2.50

OILS

IN BBLS. AND GALLONS

	Per gallon	Market
Capital Cylinder.....	"	"
Crown "	"	"
Engine.....	"	"
Machinery.....	"	"
Vacuum Marine Motor.....	"	"
Moboline A.....	"	"
"	"	"
Black Summer.....	"	"
" Zero.....	"	"
Lard Winter Strained.....	"	"
" Extra No. 1.....	"	"
" No. 1.....	"	"
Gas Engine.....	"	"
Signal.....	"	"
Headlight 150°.....	"	"
" 175°.....	"	"
Snow White.....	"	"
Prime White.....	"	"
Mineral Seal.....	"	"

POLISHES

SHINON IN PASTE AND LIQUID

	Gal.	½ Gal.	¼ Gal.
Liquid each.....	$1.00	.60	.30
	1 lb.	½ lb.	
Paste, each.....	$0.25	.15	

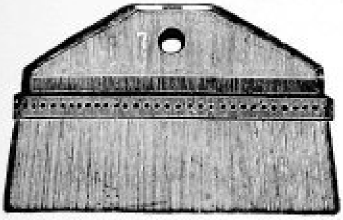
SOLVO

THE WORLD'S CLEANER

In paste form, large packages.....per doz., $4.00

BRUSHES

The Middle Column of Figures is Approximate Lengths of Bristel and is Measured from Edge of Ferrule in all Brushes



STANDARD WHITEWASH HEADS
406

Metal Bound, white bristle outside, mixed center, same stock as BB, but longer, a durable family brush. Per Doz.

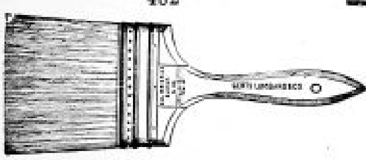
No. 7—7	in. wide	3½	$11.20
" 8—8	"	3¾	14.00
" 9—8½	"	4	20.00
" 10—9	"	4½	26.40

GEM WHITEWASH HEADS
418

Our best metal bound brush, all white Russia bristles, very heavy, a first class mechanic's tool, especially from No. 20 to 80. Per Doz.

No. 0—7	in. wide	2¾	$18.50
" 1—8	"	3	24.00
" 2—8½	"	3¼	31.00
" 3—8½	"	3½	39.00
" 4—8½	"	3¾	48.00
" 20—9	"	4	66.00
" 30—9	"	4½	90.00
" 40—9	"	4¾	108.00
" 50—9	"	5	130.00
" 60—9	"	5¼	148.00
" 70—9	"	5½	179.00
" 80—9½	"	5¾	200.00

O. K. GEM WALL-PAINT BRUSHES
482



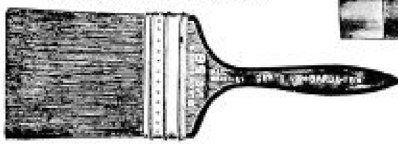
Brass band, yellow varnished handle, all white Russia bristle, an excellent painter's tool.

				Per Doz.
No. 11—3	in. wide		3	$12.40
" 12—3½	"		3¼	15.50
" 13—4	"		3½	19.20
" 14—4½	"		3¾	23.40
" 15—5	"		4	30.30
" 16—3	"	long stock	3¾	20.60
" 17—3½	"	"	4	28.30
" 18—4	"	"	4¼	33.50
" 19—4½	"	"	4½	41.60
" 20—3½	" ex	"	4¼	31.00
" 21—4	" "	"	3½	44.00

SUPER WALL-PAINT BRUSHES
486

Brass bound, yellow varnished handle, all pure select white Russian bristles; this is our best brass bound wall brush and is guaranteed in every way the best

				Per Doz.
No. 1—3	in. wide		3	$14.00
" 2—3½	"		3¼	19.40
" 3—4	"		3½	24.00
" 4—4½	"		3¾	34.50
" 5—5	"		4	41.00
" 6—3	"	long stock	3¾	26.00
" 7—3½	"	"	4	29.50
" 8—4	"	"	4¼	38.50
" 9—4	"	"	4¾	58.00
" 10—4½	"	"	4¾	64.00
" 11—5	"	"	4¾	70.00
" 12—6	"	"	4¾	80.00

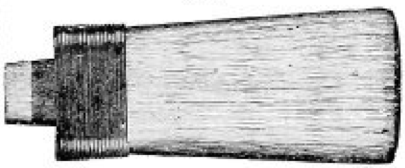


BLACK SUPER WALL-PAINT BRUSHES
500

Brass band, nickeled, imitation rosewood handle, extra select black Chinese bristle, by far the most popular brush on the market. The short lengths make a very desirable family brush, the long sizes a remarkable seller to painters; our No. 60 for barrel painting. Per Doz.

No. 50—2½	inch		2½	$7.00
" 51—3	"		2¾	8.60
" 52—3½	"		3	11.30
" 53—4	"		3¼	15.30
" 54—4½	"		3½	18.70
" 55—5	"		3¾	22.40
" 60—6	"		4	36.00
" 56—3	"	long stock.	3¾	16.00
" 57—3½	"	"	3⅞	21.00
" 58—4	"	"	4⅛	26.80
" 59—4½	"	"	3⅜	36.00

O. K. PAINT BRUSHES
550



Selected white Russia bristle bursh wire bound, warranted. Per Doz.

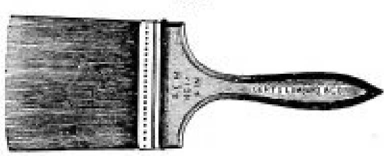
No. 1—0	3¾	$22.50
" 2—0	4	29.00
" 3—0	4¼	41.00
" 4—0	4½	50.00
" 5—0	4¾	57.00
" 6—0	5	66.00
" 7—0	5¼	76.00
" 8—0	5½	86.00

BLACK EMPIRE WALL-PAINT BRUSHES—506

Nickeled, brass band, yellow varnished handle, very choice blackChinese bristle, extra long and very elastic; this brush fully warranted. Per Doz.

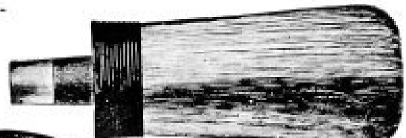
No. 61—3	in. wide	4	$24.00
" 62—3½	"	4¼	34.00
" 63—4	"	4½	39.20
" 64—4½	"	4¾	46.50

BLACK WALL PAINT BRUSHES
492



Metal bound, red stained handle, all pure black Chinese bristle, an excellent seller.

No. 0—2½	in. wide	2⅛	$3.70
" 1—3	"	2¼	4.20
" 2—3½	"	2⅜	5.00
" 3—4	"	2½	6.00
" 4—4½	"	2⅝	7.00



GLOSS PAINT BRUSHES
544

Our all white bristle brush, warranted; a painters' brush, wire bound. Per Doz.

No. 6	2⅛	$6.00
" 5	2⅜	7.20
" 4	2¾	8.00
" 3	3	10.00
" 2	3¼	11.00
" 1	3½	14.00
" 1—0	3¾	19.50
" 2—0	4	22.00
" 3—0	4¼	28.50
" 4—0	4½	35.00
" 5—0	4¾	42.00
" 6—0	5	51.00
" 7—0	5¼	63.00
" 8—0	5½	70.00

PAINTERS' DUSTERS
558

All our dusters are set with pitch, extra block and warranted to hold.

		Per Doz.
No. 2—Gray mixed	3½	$9.40
" 3— " "	3¾	10.60
" 13— " "	4¼	14.50
" 14—Bristles black outside	4	16.80
" 15—Bristles, black outside	4¼	21.00
" 16—Bristles, black outside	4½	26.60
" 25—White outside, gray bristles middle	4⅝	30.30
" 40—White, outside, extra quality all bristles	4½	31.10
" 50—White outside, extra quality all bristles	4¾	36.30
" 60—White outside, extra quality all bristles	5	40.30
" 8—Fine white bristles.	4¼	28.20
" 10— " " "	3⅞	24.00
" 12— " " "	4¼	30.00

OVAL GLOSS PAINT BRUSHES
546

Same size and style as round gloss paint, but oval shape, all white Russia bristles, oval handle, wire bound.

		Per Doz.
No. 1—0	3¾	$19.50
" 2—0	4	22.00
" 3—0	4¼	28.50
" 4—0	4½	35.00
" 5—0	4¾	42.00
" 6—0	5	51.00
" 7—0	5¼	63.00
" 8—0	5½	70.00

EXTRA GLUE BRUSHES
562

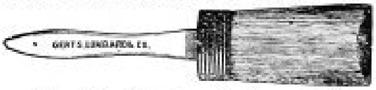
All pure Russia bristle; iron handles to prevent shrinkage; brass ferrule; warranted to stand hot glue. Per Doz.

No. 000	⅝ inch	1⅝	$5.60
" 00—	¾ "	1¾	6.00
" 0—	⅞ "	2	7.00
" 0—1	"	2⅛	8.50
" 1—1⅛	"	2¼	10.00
" 3—1¼	"	2⅜	12.50
" 4—1½	"	2⅝	16.00

BRUSHES

The middle column of figures is approximate lengths of bristle, and is measured from edge of ferrule in all brushes

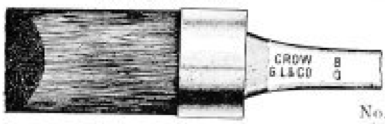
GLOSS OVAL VARNISH BRUSHES—576



All white bristles, wire bound, full length, good for either paint or varnish.

		Per doz.
No. 1	3	$11.60
" 1—0	3¼	13.00
" 2—0	3½	15.00
" 3—0	3¾	20.00
" 4—0	4	24.00
" 5—0	4¼	29.50
" 6—0	4½	37.00
" 7—0	4¾	42.00
" 8—0	5	49.00

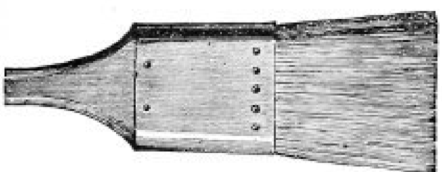
CROW CHISEL OVAL VARNISH BRUSHES—590



Steel, nickel plated ferrule, all pure black Chinese bristles, chisel pointed, made with care, a very good family or painter's brush, for varnish or paint, our best seller.

		Per doz.
No. 1—0	2⅝	$9.00
" 2—0	2¾	9.60
" 3—0	2⅞	11.40
" 4—0	3	12.00
" 5—0	3⅛	14.60
" 6—0	3¼	15.40
" 7—0	3½	19.00
" 8—0	3⅝	24.00
" 9—0	3⅞	27.00
" 10—0	4⅛	32.00

FRENCH FLAT BRISTLE VARNISH BRUSHES—640



Varnish brushes in daily use should be suspended in varnish over night when not in constant use. Thin down a little oil with turpentine to keep brushes in. All flat varnish and flowing brushes that are set with glue are so stamped. They must not be put in water. Similar goods not so stamped are set in cement. These must not be put in alcohol shellac.

All white French bristle, plain wood handle.

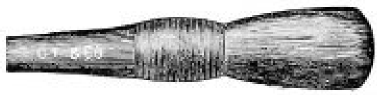
		Per doz.
1 inch	1⅜	$1.45
1½ "	1½	1.90
2 "	1¾	2.75
2½ "	1⅞	3.90
3 "	2	5.25
3½ "	2	7.50
4 "	2	10.00

BLACK EAGLE CHISEL FLAT VARNISH BRUSHES—682

Extra fine quality, black Chinese bristle, chisel point.

		Per doz.
1 inch	1⅝	$3.80
1½ "	2	6.00
2 "	2¼	8.00
2½ "	2⅜	12.00
3 "	2½	16.00

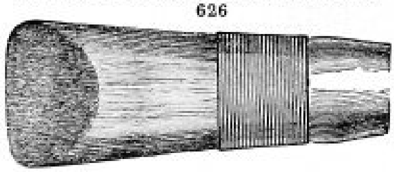
EXTRA FRENCH SASH TOOLS—622



All white bristles, blue wire ferrule, medium grade, good family brush.

		Per doz.
No. 1	1½	$1.20
" 2		1.60
" 3		2.00
" 4		2.60
" 5	1¾	2.90
" 6		3.20
" 7		3.50
" 8		3.80
" 9		5.50
" 10	2¼	6.40

EX.-EX. CHISEL OVAL SASH BRUSHES 626



Socket handle, wire bound, chisel pointed, all selected white bristle, ready for nice work on sash, our best oval.

		Per doz.
No. 4	2	$5.60
" 5	2⅛	6.00
" 6	2¼	7.50
" 7	2⅜	9.20
" 8	2½	10.00
" 9	2¾	13.20
" 10	2¾	14.00

SUPER OVAL CHISEL SASH BRUSHES—630

Oval, wire bound, all white French bristle, nicely chiseled, a very poular brush.

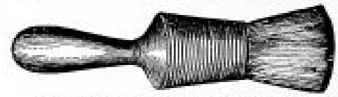
		Per doz.
No. 3	1⅝	$2.90
" 4	1¾	3.30
" 5	1⅞	3.80
" 6	2	4.40
" 7	2	5.00
" 8	2⅛	6.30
" 9	2¼	7.80
" 10	2½	8.80

SUPER CHISEL SHELLAC BRUSHES 655

Tin bound, cedar handle, fine white French bristle, for shellac or varnish, glue set; do not put in water.

		Per doz.
1 inch	1½	$3.70
1½ "	1⅞	5.50
2 "	2	9.50
2½ "	2¼	11.00
3 "	2⅜	14.50

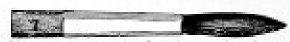
STENCIL PLATE BRUSHES—604



All white bristle, tin band on small sizes, zinc on larger sizes, yellow finished handles, a good, full ordinary brush.

	Per doz.
No. 1	$2.00
" 2	2.50
" 3	2.75
" 4	3.25
" 6	3.90
" 7	4.50
" 8	5.00
" 10	7.50
" 12	10.00
" 14	12.50

BRISTLE MARKING BRUSHES—690



Round and flat, in tin, cedar handles, a good marking brush.

	Per doz.
No. 1	$0.60
" 2	.65
" 3	.75
" 4	.80
" 5	.90
" 6	.95
Assorted Nos. 1 to 6	.80
" " 1 " 6, per gross	8.80

SUPER KNOTTED ROOFING BRUSHES 610

Our knotted roofing brush, made like oval paint brushes, fastening securely to a heavy block, for use in roofing paint, with long handles, all gray Russia bristle.

		Per doz.
2 knot	4	$34.00
3 "	4¼	50.00
4 "	4¼	65.00

C. M. KNOTTED ROOFING BRUSHES 612

Style of super roofing brush, gray bristle outside, gray fiber middle, very full and durable, gives perfect satisfaction, a great seller.

		Per Doz.
2 knot	4	$15.00
3 "	4	21.00
4 "	4	27.00

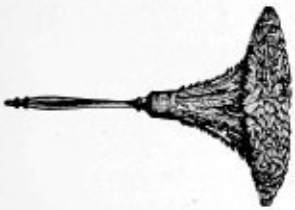
SHIP SEAM BRUSHES—616

No. 1—Per dozen	$3.40
" 2—Extra large, per dozen	4.50

BRUSHES

OSTRICH FEATHER DUSTERS—900

Full center.



The number of the dusters represent the length of the feathers in inches.

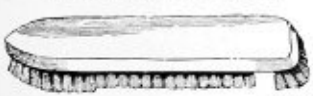
No.	5	per doz.	$ 2.25
"	6	"	3.25
"	7	"	4.50
"	8	"	5.75
"	9	"	6.75
"	10	"	10.00
"	11	"	13.00
"	12	"	16.00
"	13	"	20.00
"	14	"	25.00
"	16	"	40.00
"	18	"	46.00
"	20	"	51.00
"	22	"	55.00
"	24	"	60.00

WOOL DUSTERS—908

Bishop's patent, fancy colors.

No. 00.	Per doz		$ 1.80
No. 0.	"		3.60
No. 2.	"		6.00
No. 4.	"		7.80
No. 6.	"		9.60

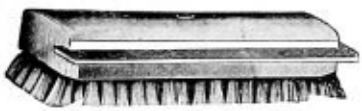
SCRUB BRUSHES—1008



			Per Doz.
No.	1.	White Tampico	$2.00
"	2.	" "	2.20
"	3.	" "	2.40
"	4.	" "	3.20
"	5.	" "	2.80
"	6.	Gray "	3.00
"	7.	" and White Tam.	3.20
"	9.	" Tampico	3.00
"	11.	" Mixed Hair	5.00
"	30.	Palmetto	3.40
"	40.	"	3.60
"	50.	"	5.00
"	10.	Gray Bristles	5.60
"	17.	" "	6.80
"	18.	" "	12.50
"	44.	White Tampico	1.25
"	33.	"	1.50
"	22.	Gray "	1.80
"	2.	Rice Root	2.80
"	3.	"	3.20
"	333.	"	1.50
"	140.	Palmetto	1.20
"	150.	"	1.40
"	160.	"	1.50
"	170.	"	1.80

RUBBER SCRUB BRUSHES—1010

With Long Handles.



		Per Doz.
No. 0.	Tampico	$4.40
" 1.	"	5.20
" 2.	Mixed Gray	8.00
" 3.	Gray Mixed Bristles	16.00
" 4.	Bass or Coir	8.00

RUBBER SCRAPERS—1014

		Per Doz.
12 in.	Pure Rubber, thin	$3.60
14 "	" " "	4.20
16 "	" " "	4.80
12 "	Extra Pure Rubber, heavy	4.40
15 "	" " "	6.00
18 "	" " "	8.40
24 "	" " "	9.00

EXTRA COUNTER DUSTERS—978

All Russia bristle, black outside, varnished handles.

			Per Doz.
No. 1	7	inch	$5.20
" 2.	8	"	7.20
" 3.	9	"	8.40
" 4.	9½	"	10.50
" 5.	10	"	14.00
" 6.	10	"	16.00

Extra dusters are well filled, all bristle.

RUSSIA FLOOR BRUSHES—950

All selected black Russia bristle, very heavy stock. Two handle holes on opposite sides of block.

			Per Doz.
No. 3.	12	inch	$28.00
" 4.	13	"	39.00
" 6.	14	"	54.00
" 8.	16	"	62.00

WINDOW BRUSHES—922

		Per Doz.
No. 0.		$3.10
" 1.		5.70
" 2.		9.00
" 3	Wire Fastened	13.00

EXTRA WINDOW BRUSHES—924

With rubber bands for washing railroad cars.

	Per Doz.
No. 12. Wire Fastened Rubber Band	$16.00
No. 13. Wire Fastened Rubber Bands	27.00
No. 14. Wire Fastened Rubber Bands	33.60

DANDY OR ROOT HOOF BRUSHES 1084

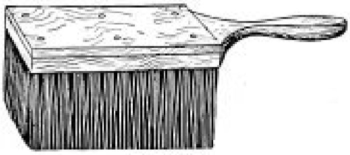
			Per Doz.
No. 00	Rice Root		$2.30
" 0	"	"	3.00
" 1	"	"	3.50
" 10	"	"	4.00
" 20,	leather side pes.	"	5.00
" 40	"	"	5.50
" 60,	leather side pes.	"	6.00
" 80	"	"	7.50
" 88,	fine	"	8.00
" 8½,	African Bass		2.00

HORSE BRUSHES—Leather Back 1082

	Per Doz
No. 100. Gray tampico center, white outside, red embossed back	$2.00
No. 105. Army shape, gray center, black outside, red embossed back	2.65
No. 110. Oval shape, gray center, black bristle outside, orange embossed back	3.35
No. 115. Selected gray fiber, oval face, russet leather back and strap	4.65
No. 120. Selected black fiber oval face, bristles outside row, harness leather back and strap	7.00
No. 123. White, penetrating, very stiff	21.00
No. 125. Good quality mixed "Paint Stumps" oval face, orange leather back and strap	10.00
No. 127. Stiff yellow penetrating	44.50
No. 135. Large size army brush, good quality gray mixed bristles, flexible block, russet back	10.65
No. 145. Oval face good quality black bristles, harness leather back, curved strap	13.25
No. 129. Army brush, good quality, gray bris., flex. block, russet back and strap	18.00
No. 150. Oval face, good quality, white bristles, olive leather back, buckle strap	16.75
No. 155. Flat face, best quality, paint stumps, russet leather back and strap	21.50
No. 160. Flexible block, very stiffest, gray bris., penetrating, russet leather back and strap	21.50
No. 165. Flexible block, long black Chinese bristles, cream leather back, wide strap	26.75

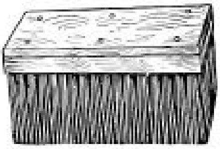
BRUSHES—BROOMS

STEEL WIRE CASTING BRUSHES



Handled

No. 45. 3 rows, 4-in. wire, per doz. $3.50
" 47. 4 " 4 " " " 4.00
" 49. 5 " 5 " " " 4.50



Square

No. 11. 4 rows, 3-in. wire, per doz. $3.00
" 12. 4 " 4 " " " 3.50
" 21. 5 " 2½-in. " " 3.00
" 22. 5 " 3 " " " 3.50
" 23. 5 " 4 " " " 4.50

HAND SCRATCH BRUSHES

No. 370. Round Wire

For removing paint.

7x3 inch, 9 rows, 1⅛ wire, per doz. $6.50

CAPITAL BROOMS

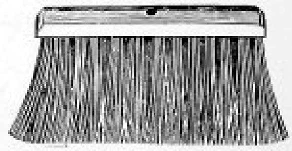
A combination of rattan and broom corn, for warehouse use.

Per doz..............................$5.00

CORN BROOMS

Extra heavy warehouse, per doz...$4.50
Medium weight Meteor............. 4.50

PUSH BROOMS



For street and stable use.

Extra Cane

14-inch, with handles, per doz....$11.00
16 " " " " 15.00

Coir

12-inch, with handles, per doz....$13.00
14 " " " " 14.00
15 " " " " 15.00
16 " " " " 16.00

Steel Wire

12-inch, with handles, per doz.... $6.50
14 " " " " 7.00
16 " " " " 9.00

STAR WHITEWASHING, PAINTING AND SPRAYING MACHINES

Are the best machines on the market, used for whitewashing, spraying and painting with Graphite and Mineral Paints.

Epuipment

Spray pipe complete with ¼-inch cock and spray nozzle, 1 extra spray tip 200-pound pressure gauge, special galvanized sieve, follower wrench, ¾-inch discharge cock, 1 length 1-inch suction hose and 20 feet of ½-inch Star special discharge hose.

Wt. Lbs.	Style	Capacity	Each
100	A	Equal to the work of 30 men	$44.00
85	B	" " " " " 20 "	38.00
80	C	" " " " " 16 "	31.00
75	D	" " " " " 10 "	25.00

STYLE J

Legs can be taken off and put over Barrel

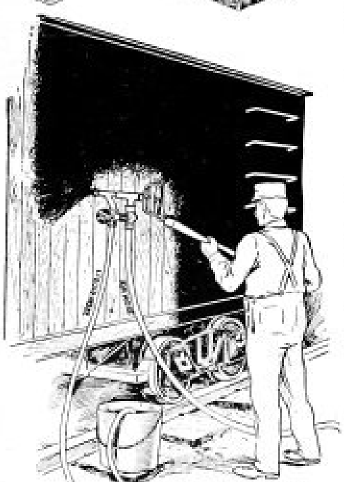
The pumping cylinder and air chamber is constructed entirely of brass, which will not corrode from the use of any liquids. One man can operate this machine alone and from 80 to 90 pounds pressure can easily be carried. Capacity equal to work of 6 men with brushes.

Style J

Equipment

Spray pipe complete with ⅛-inch cock and spray nozzle, follower wrench, and 10 feet of ¾-inch discharge hose. Weight, 40 pounds. Each........................$12.60

PNEUMATIC PAINTING MACHINE



Showing Painting Car

The above machine is designed for spraying Lead and Oil or Asphaltum Paints. For use in plants which have a compressed air system installed.

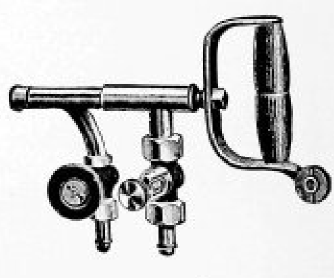
Well adapted for painting bridges, iron work, railroad cars, etc. We do not recommend this machine for doing any painting or work on the inside of enclosed buildings.

A steady air pressure of from 60 to 80 pounds is required to operate same.

Capacity equal to the work of 10 men with brushes.

Price Painting Machine Complete

with hardwood handle to attach for reaching high places, without hose, but fitted with ½ inch couplings for same...................................$23.00



Also Made Guarded

LAMPS AND LANTERNS

MILL LAMPS

Improved Square Tubular Lamps

With Outside Ratchet Stem

No.	Size of Burner	Size of Wick Inches	Size of Reflector Inches	Each	
				Plain	Guarded
1	No. 2	1	6	$5.50	$6.50
2	No. 3	1½	8	6.50	7.50
3	No. 3	1½	12	8.50	9.50

Triangular Tubular Lamps

No. 4
Size of Burner No.3
Size Wick, in...1½
Each.....$8.50

STATION AND ENGINE ROOM LAMPS

SQUARE

No.	Size of Glass	No. of Burner	Size of Wick Inches	Size of Reflector, Ins.	Each
1	8x10	1	⅝	7	$2.50
2	10x12	2	1	8	2.90
3	11x15½	2	1	10	3.30

TRIANGULAR

No.	Size of Burner	Size of Wick Inch	Size of Reflector. Inches	Each
2	No. 2	1	8	$2.90
3	No. 2	1	10	3.30

Square

Triangular

HEADLIGHTS

R. R. PATTERN

Burner	Reflector Inches	Each
Locomotive	16	$30.00

MOTOR PATTERN

Wick	Reflector Inches	Each
Round	10	$13.00

Railroad Pattern

Motor Pattern

BRIDGE SIGNAL LAMPS

For Kerosene—No Chimney Required

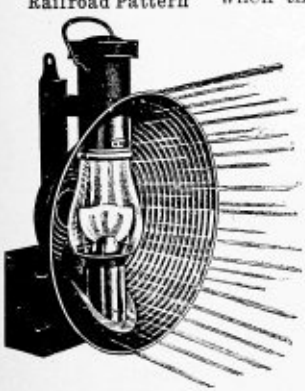
"Bridge Signal" Lamps are regularly fitted with four lights of colored glass, red or green (color optional).

These Lamps are in use on a large number of railroad drawbridges, and in operation show the green lights from the shore when the draw is closed, and the red lights from the shore when the draw is open. The Founts hold oil to burn 18 hours.

No. 2. 21¾ inches high, 8½ inches wide, 9 inches deep, fitted with No. 3 "Pioneer" Cog Burner, 1½ inch Wick.....each $10.00

No. 3. 25½ inches high, 13¾ inches wide, 13 inches deep, fitted with No. 3 "Pioneer" Cog Burner. 1½-inch Wick.....each 12.00

Price with Semaphore Lenses as illustrated on application.



TUBULAR HEADLIGHT

No.	Size of Burner	Size of Wick, Inch	No. of Globe	Price Complete	Globes Per Dozen
100	No. 2	1	0	$2.75	$0.90
40	No. 9	1½	4	6.00	4.80

TUBULAR STREET LAMPS

FOR KEROSENE

With Bracket

For Post

Hanging

Post

SQUARE PATTERN

No.	Size of Burner	Size of Wick inches	Price Each
2	No. 3	1½	$9.00

Japanned Iron Brackets only.....each $1.50
" " Posts " " 10.00
Turned Wood " " " 4.00
Posts 8½ feet, extreme length.

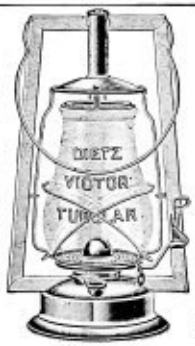
ROUND PATTERN—Hanging

No.	Size of Burner	Size of Wick inches	No. Globe	Price Each	Globes Only Price per Doz
3	No. 3	1½	3	$6.00	$6.40

Post

No.	Size of Burner	Size of Wick inches	No. Globe	Price Each	Globes Only Price per Doz.
3	No. 3	1½	3	$6.00	$6.40

Crown



Victor

Monarch

LANTERNS

Tubular

FOR KEROSENE

Style No.	Burner No.	Wick inches	Per Dozen: With White Globes	Per Dozen: With Red Green or Blue Globes	Globes Only per Dozen: White	Globes Only per Dozen: Color'd
0 Crown	1	5/8	$9.00	$11.00	$0.90	$3.50
0 Victor	1	5/8	9.50	11.50	.90	3.50
0 Monarch	1	5/8	9.50	11.50	.90	3.50
Vesta	0	3/8	17.00	21.50	.90	3.50

Vesta

BLIZZARD COLD BLAST

For Kerosene

No.	No. Burner	Size Wick Inches
2	2	1

With White Globes.....per dozen $16.00
With Colored " ..... " 18.50
With Extra Large Font..... " 17.00
With Copper Font..... " 23.50

Regular Police Lantern

BULL'S EYE POLICE

Burn Sperm Oil

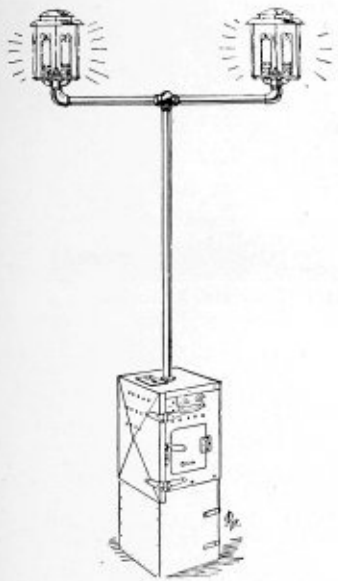
Flash Police Lantern

Material	Size Lens inches	Per Dozen: Flash-light	Per Dozen: Regular
Tin Japanned	3	$9.00	$7.00
Brass	3	36.00	.....
Nickel Plated	3	48.00	.....

PORTABLE LIGHTS

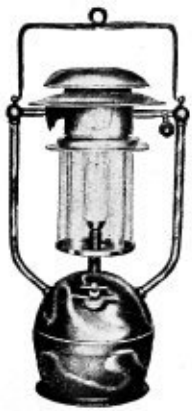
B & W

ABSOLUTELY SAFE. COST 1/10 OF ELECTRICITY
CAN BE HANDLED WHILE LIGHTED WITHOUT DANGER



Portable Outdoor Light No. 7

Wall Lamp No. 15



Pressure Lamp, No. 25

Flood Light, No. 17

HANGING LIGHTS

No.	Candle Power	Height	Weight	Consumes 1 gal. oil in	Each
25	800	22 in.	10 lbs.	24 hrs.	$15.00
8	2,000	30 in.	15 lbs.	14 hrs.	30.00
11	3,000	33 in.	16 lbs.	8 hrs.	35.00
15	2,000	33 in.	15 lbs.	14 hrs.	20.00

STANDING LIGHTS

No.	Candle Power	Height	Weight	Consumes 1 gal. oil in	Each
17	2,000	7 ft.	25 lbs.	12 hrs.	$40.00
7	4,000	7 ft.	80 lbs.	5 hrs.	75.00
9	8,000	7 ft.	85 lbs.	3 hrs.	100.00
Portable Search	12,000	3½ ft.	80 lbs.	6 hrs.	125.00

TORCHES

GASOLINE AND COAL OIL

Single burner..... per doz., $24.00
Double " ..... " 42.00

In ordering state if for gasoline or oil.

BURNERS

For Sun Chimney

Convex, no Chimney

Hinge for Sun Chimney

KEROSENE BURNERS

No.	For Sun Chimney per doz.	Convex, no Chimney, per doz.	Hinge for Sun Chimney, per doz	Size of Wick inches
0	$0.90	$0.72	$2 00	3/8
1	1.00	.72	2.20	5/8
2	1.45	1.20	2.75	1
3	.....	.....	8.35	1½

No. 3, 1⅛ inch Tubular Burner

No. 1, ⅝ inch Tubuler Burner for No. 0 Lantern

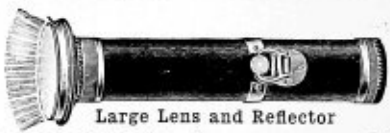
No. 1. For No. 0 Lantern.....per doz. $1.60
No. 3. " Street, Bow and Triangular Lamps " 4.00

"EVER READY" OSRAM FLASH LIGHTS

DOUBLE LIGHT POWER

Leatherette Covered

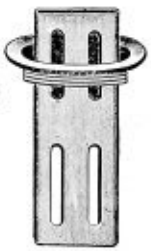
No. 2705. 1½x8½ inches.....$2.00
No. 2706. 1½x8½ " 2.00
Extra Battery, No. 505..... .30
Extra Bulb, No. 1493, 3½ volt..... .75
No. 2707. 1½x11 inches..... 2.50
No. 2708. 1½x11 " 2.50
Extra Battery, No. 511..... .30
Extra Bulb, No. 1493, 3½ volt..... .75
No. 2709. 1½x13 inches..... 3.00
No. 2710. 1½x13 " 3.00
Extra Battery, No. 515..... .50
Extra Bulb, No. 1495, 5½ volt..... .75



Large Lens and Reflector

No. 2718. 1½x8½ inches..... $3.50
Ho. 2719. 1½x8½ " 3.50
Extra Battery, No. 505..... .30
Extra Bulb, No. 1493, 3½ volt..... .75
No. 2720. 1½x11 inches..... 4.00
No. 2721. 1½x11 " 4.00
Extra Battery, No. 511..... .30
Extra Bulb, No. 1493, 3½ volt..... .75
No. 2722. 1½x13 inches..... 4.50
No. 2723. 1½x13 " 4.50
Extra Battery, No. 515..... .50
Extra Bulb, No. 1495, 5½ volt..... .75

Two-Tube Burner



Flat Copper Burner

Nos. 1 and 2 Ratchet Burners

SPERM OIL BURNERS

Two-Tube Burners, tin.....per doz. $0.36
Flat Copper " No. 1..... " .48
Ratchet " No. 1..... " .72
" " No. 2..... " .96

REFLECTORS

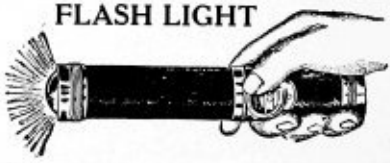
SILVERED GLASS

Size.....inches	5	6	7	8	10	12
Price..per doz.	$1.90	2.00	2.40	2.80	3.70	5.00

FLAT CORRUGATED, SILVERED GLASS REFLECTORS

For No. 2 Government and Bow Lamp..per doz. $7.00
For Wings of No. 2 Bow Lamp..... " 7.00
For No. 4 Tubular Triangular Lamp... " 10.00

THE "EVER READY" ELECTRIC FLASH LIGHT



No. 11. Baby, 1x6½.....$1.25
No. 1. Pocket, 1½x8½..... 1.50
No. 2. Larger, 1½x11..... 2.00
No. 3. Largest, 1½x13..... 2.50
Extra batteries for No. 3, 50 cents; balance, 30 cents.
Extra bulbs, 50 cents.

LAMP WICKS

No.	Width, inches	Price per gross	Price per doz.
0	3/8	$0.40	$0.05
1	5/8	.56	.08
2	1	.80	.10
3	1½	1.28	.15

LAMP CHIMNEYS

SUN—DUAL—SUN HINGE

No. 0. 4x5 inches long.....per doz. $0.75
No. 1. 6x8 " " ..... " .80
No. 2. 6x8 " " ..... " 1.00

LANTERNS

LAKE AND RIVER—GOVERNMENT PATTERN

For Kerosene with No. 1 Convex Burner

Lake and River

Style	Per Dozen	Globes Only per Dozen
With white globes	$14.50	$1.30
" green or blue globes	20.00	6.80
" red globes	24.00	10.80

No. 39. Railroad Single Guard

No. 39 RAILROAD

Burns Lard Oil, has Hinge Top and Removable Globe

Single or double guard with No. 1 burner.

Tin with white globes	per dozen	$12.00
" " Ruby "	" "	20.50
" " blue or green globes	" "	16.50
Brass with white globes	" "	42.00
Nickel plated, white globes	" "	54.00
Globes only, white	" "	1.50
" " ruby	" "	8.00
" " blue or green	" "	4.50

No. 3 CONDUCTORS' LANTERN

Burns Lard Oil, has Hinge Top and Removable Globe

No. 3 Conductors'

Style	Burner	Price Each		Globes, Per Doz.	
		With White Globes	With Half Ruby or Green Globes	White	Colored
Brass	5/8 Ratchet	$5.00	$7.50	$6.00	$30.00
Nickel Plated	5/8 "	6.00	8.50	6.00	30.00

Navy Lantern

NAVY

Galvanized Iron. The Strongest Lantern Manufactured

Size Globe Inches	With White Globes, Per Doz.		Globes Only, Per Doz.		
	Galvanized	Polished Brass	White	Ruby	Green
4½	$13.50	$30.00	$1.30	$10.00	$7.00
6	22.00	.....	2.25	.....	.....

STEAMER SIGNAL LAMPS

BUFFALO PATTERN

No. 1 Heavy Brass

No. 1 Heavy Brass

10 inch Steamer Signal Lamps, patent fluted lens, in sets of three, ruby, green, and white		$96.00
10 inch Head Light, white		36.00
10 inch Side Lights, red or green	each	30.00
For extra heavy guards	per set add	16.00
For brass guards for Head Light		6.00
8 inch Steamer or Tug Signal Lamps, patent fluted lens in sets of 3, ruby, green and white		80.00
8 inch Head Light, white		28.00
8 inch Side Lights, red or green	each	26.00
For brass guards	per set, add	12.00
Brass guards on Head Light		5.00

No. 2. Galvanized Iron or Japanned Tin

10 inch Steamer Signals, galvanized	per set of 3,	$55.00
10 inch Steamer Head Light, galvanized	each	21.00
10 inch Steamer Side Light, galvanized red or green,	each	18.00
10 inch Steamer, heavy tin, japanned, same price as above		
8 inch Steamer or Tug Lamps, galvanized	per set of 3,	43.00
8 inch Head Light, Galvanized	each	18.00
8 inch Side Lights, galvanized, red or green	each	13.00
8 inch tin, japanned, same as galvanized		

No. 2 Galvanized Iron or Japahned Tin

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

Plain Lens

MARINE SIGNAL LAMPS

New York Pattern

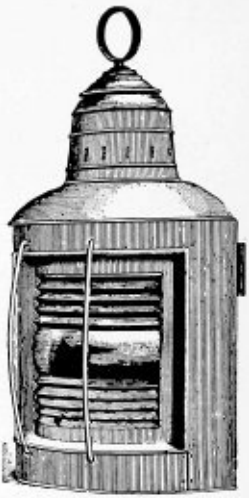
SIDE LIGHTS

PLAIN LENS

No.	Size Glass Width, Height inches	Height Frame inches	Extreme Height inches	Width Base inches	Galv. per pair	Polished Brass per Pair	Lens Only Green	Lens Only Red
01	4¾x4	6	8½	6¼	$4.50	$7.00	$0.50	$0.50
1	5 x4¼	7	10	6½	3.75	6.75	.50	.50
2	5¼x5½	8¾	13¾	7¼	5.00	9.00	.60	.60
3	6¾x5	9¼	15¾	9	5.25	10.00	.60	.60
5x6	6¼x5¼	8½	12	7	6.50	11.00	.60	.60
4	6¼x6	10	16¾	9	6.75	14.00	.70	.70
5	7½x7¼	11	17½	10	8.00	16.00	....	....

FRESNEL LENS

6	4 x4¼	6¾	9¾	6½	$6.50	$9.50	$1.20	$1.80
7	4¾x5	8½	11¾	7¼	6.75	9.75	1.50	2.00
7½	5 x5½	9	14	7¼	6.75	9.75	1.50	2.00
8	5½x4¾	9¼	16¾	9	7.00	11.00	1.50	2.00
9	6¼x5¾	10	16¾	9	9.00	16.00	3.50	4.00
10	6½x6½	11½	17½	10	10.50	18.00	3.50	4.00
10½	6½x6½	12	19	11¼	12.50	23.00	3.50	4.00
11	10 x7½	13½	21	13¾	21.00	30.00	5.70	7.80



Fresnel Lens

Plain Lens

BOW LIGHTS

PLAIN LENS

No.	Size Glass Width, Height inches	Height Frame inches	Extreme Height inches	Width Base inches	Galv. each	Polished Brass each	Lens Only each
017	4¼x3½	6¼	8½	4¾	$4.50	$6.00	$0.50
17	4¼x4½	7¾	11	5¼	4.50	6.00	.50
18	5½x4½	8¾	14	6	4.75	8.00	.50
19	5¾x6	10¾	17¼	7½	5.00	8.50	.70
20	6 x7	10½	17	7½	5.25	9.00	.90

FRESNEL LENS

12	4¾x4½	7¼	9¼	4¾	$5.00	$6.75	$1.00
13	4¾x4½	8¾	14¼	6	5.25	9.00	1.00
13½	6¼x5¼	8¼	14	6¾	5.50	9.25	2.00
14	5¾x5¾	10¼	14	6¾	5.75	9.50	2.00
15	6 x6¼	10½	17½	7½	6.00	10.00	3.00
16	8 x7¼	13¾	21¼	9¼	12.00	16.00	5.00

Fresnel Lens

Regular Fresnel Anchor Light

ANCHOR LIGHTS

No.	Diam. of Glass inches	Height of Glass inches	Height of Frame inches	Extreme Height inches	Galv. each	Polished Brass each	Add for Red, Green or Blue Lens	Lens Only White each	Lens Only Red, Green or Blue each
22½	4¾	4¼	8	10½	....	$6.00	$1.50	$2.00	$3.50
21½	5¾	5	9½	14½	$5.00	7.00	1.80	2.25	3.75
21	4¾	4¼	8¼	13¾	3.00	5.00	1.50	2.70	4.25
22	6	5¾	12	18¼	5.25	10.00	1.75	2.25	3.75
20½	6	6¾	12½	19	6.00	10.50	2.00	3.00	5.00
23	8	7	13¾	21	10.50	15.00	3.00	5.00	8.00

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

Fancy Fresnel Anchor Light

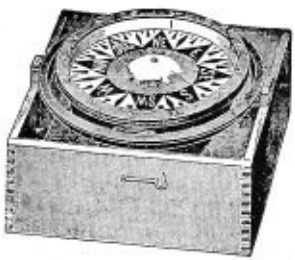
RITCHIE'S SPIRIT COMPASS

FLAT CARD, CENTRAL BUOYANCY

No.	Diameter Card Inches	Outside Diameter Gimbal Ring Inches	Size Box Inches	Price Compass with Box Each	Price Compass without Box Each
37	11	15½	17½	$75.00	$72.00
*39	....	....	....	75.00	72.00
41	10	13¼	15	65.00	62.50
*43	....	....	....	65.00	62.50
45	8¾	12½	13¾	47.00	44.75
*47	....	....	....	47.00	44.75
49	7½	10¾	12	39.00	37.00
*51	....	....	....	39.00	37.00
53	6¾	9¾	11	32.00	30.50
*55	....	....	....	32.00	30.50
57	5¾	8¾	9½	31.00	29.75
*59	....	....	....	31.00	29.75
61	4½	6¾	8¼	27.50	26.25
63	4	6	7¼	25.00	24.00
65	3	5¼	6¾	21.00	20.00
67	2½	U.S.Type	7	20.00	19.00
69	2⅛	3½	4½	10.00	9.50

*Nos. 39, 43, 47, 51, 55, 59 are graduated to degrees.

BLISS LIQUID SPIRIT COMPASS



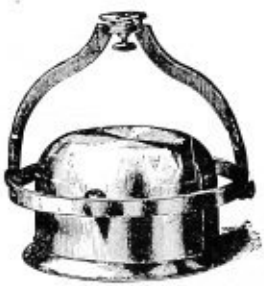
No.	Diameter of Card Inches	Diameter of Gimbal Ring Outside	Size Box Inches	Description	Compass and Box Each	Compass Only Each
50	8¾	12¼	13¾	Divided to ¼ points and degrees	$47.00	$44.00
52	8¾	12¼	13¾	" " ¼ "	47.00	44.00
54	7½	10½	12	" " ¼ " and degrees		
				6 needles.....	39.00	36.00
56	7½	10½	12	Divided to ¼ points	39.00	36.00
58	6¾	9⅝	11	" " ¼ " and degrees		
				6 needles.....	32.00	30.00
60	6¾	9⅝	11	Divided to ¼ points	32.00	30.00
62	5¼	8⅜	9½	" " ¼ " 4 needles...	31.00	29.00
64	4⅝	7⅛	8¼	" " ½ "	27.50	26.00
66	4	6¼	7½	" " ½ "	25.50	24.00
68	3⅛	5¼	6½	" " ½ "	21.00	20.00

BAKER'S PATENT OIL COMPASS

Axial Balance

	Each
3 in. card	$20.00
4 " "	25.00
5¾ " "	30.00
6¾ " "	32.00
7½ " "	39.00

TELL-TALE COMPASS



	Each
4½ inch.....	$ 8.75
5½ "	11.00
6½ "	13.50

Always Steady

WOOD BOX COMPASS

Brass Bowl, Agate Bearing

Size Card	Size Box	Each
3 inch	5 inch	$3.75
4 "	6 "	4.25
4¼ "	7 "	5.00
5 "	8 "	5.25
6¾ "	10 "	6.75

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

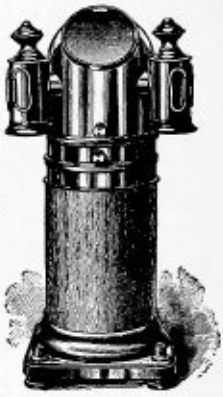
BINNACLES

TRIPOD PATTERN
Brass

No.	Height Inches	For Size Liquid Compass	Price Each
145	25	4 inch card	$55.00
143	32	5¼ " "	77.50
142	36½	6¾ " "	88.00
141	39	7½ " "	93.50
140	42	8¾ " "	99.00

BRASS TOP AND BOTTOM
Mahogany Centre

No. 160. Total height of binnacle 25 to 30 inches, receives liquid compass with 4 inch card..... each $55.00



Prices do not include compass.

BINNACLE HEAD

POLISHED BRASS WITH CYLINDER AND FLANGE

Diameter		Each
7¼	inches, for Compass with 4 inch card...	$45.00
10	inches, for Compass with 5¼ inch card...	50.00
11	inches, for Compass with 6¾ inch card...	55.00
12	inches, for Compass with 7½ inch card...	60.00
13	inches, for Compass with 8¾ inch card...	65.00

MAHOGANY DESK BINNACLE

No.	Receives Compass	Without Compass	With Liquid Compass
0	2⅛ inch Card	.....	$12.00
01	2½ " "	.....	16.50
1	3⅛ " "	.....	19.00
2	4 " "	$11.00	27.75
3	5½ " "	14.00	34.00
4	6¾ " "	16.00	38.00
5	7½ " "	18.00	45.00

Extra Lamps, 7 inch.....$3.50 each
" " 8 " ..... 4.00 "

Prices do not include Compass.

Log

BLISS TAFFRAIL LOG

	Each
Bliss Taffrail Log, Complete.....	$22.00
Extra Rotators.....	5.00
Extra Lines, 200 ft. long	2.50

Rotator

SEXTANT

Pillar Frame

20th Century

OCTANT

PELORUS

Complete Assortment of these Goods in our Marine Catalog. If interested, send for it.

ANEROID BAROMETERS

Brass Case

Diameter inches	Description	Each
5	Closed face, with card dial, in brass case	$6.00
5	Open face, with card dial, in brass case	9.00
5	P H N B brand, closed face, with metal dial, in brass case	9.00
5	" brand, open face, with metal dial, in brass case	11.00
5	" brand, open face, with metal dial, in brass case and one thermometer attached	12.00
6½	P H N B brand, open face, with metal dial, in brass case and two thermometers attached, showing Fahrenheit, Centigrade, and Reaumer scales	17.00

POCKET COMPASSES

No. 4100A

No. 4200

No. 4170
No. 4180

No. 4140B

No. 4160. Brass case, silvered metal dial, slip cover, brass cap to needle, with stop.

Diameter, inches	1⅝	1¾	2
Each	$0.85	90	95

No. 4160A. Brass, metal dial, slip cover, slide top, jeweled, full circle division.

Diameter, inches	1⅝	1¾	2
Each	$1.20	1.25	1.30

No. 4200. Flat, brass, waterproof case, metal dial, slip cover, automatic stop, jeweled, best French bar needle, raised full circle division, cover to fit on bottom.

Diameter, inches	2	2⅜	2¾
Each	$2.20	2.30	2.80

No. 4170. Brass case, metal dial, hinge cover, jeweled, slide stop, full circle division.

Diameter, inches	1⅝	1¾	2
Price, each	$1.40	1.55	1.60

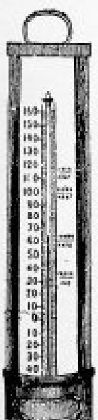
No. 4180. Same as No. 4170, except case is nickel plated.

Diameter inches	1⅝	1¾	2
Price, each	$1.90	2.05	2.30

No 4140B. Mahogany case, 3x3 inches, metal dial, 2-inch needle, with stop, full circle division .... each $3.40

THERMOMETERS

No.	Description	Price Each 8 in.	10 in.	12 in.
3085	Japanned tin case, reading to 40° below zero	$0.20	$0.25	$0.30
3079	Wood back, tube sunk in wood, reading to 40° below zero	.30	.40	....
3076	Boxwood back, tube sunk in wood, reading to 40° below zero	.55	.70	.90
3067	Wood back, porcelain scale, reading to 40° below zero	1.50	2.00	....



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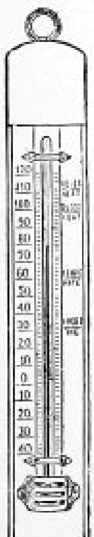

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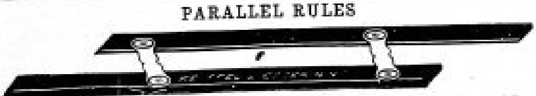
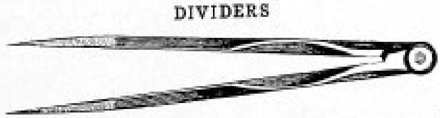
PARALLEL RULES

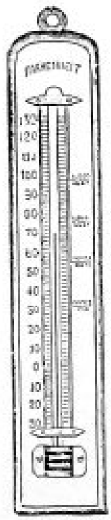


Size	inches	6	9	12	15	18	24
No. 513 Ebony	each,	$0.50	.75	.90	1.00	1.25	1.80
No. 513A Rubber	"	$0.45	1.00	1.50	2.00		

DIVIDERS



6½ inch, brass	each, $0.40
8 " "	" .60
6 " German silver	" 1.00



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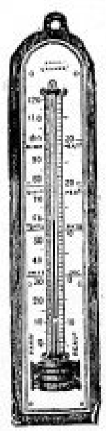


No. 3067

CHARTS AND NAUTICAL PUBLICATIONS

We are agents for the United States Hydrographic Office, and can supply all nautical publications issued by this department of the U. S. Government, embracing Charts, Sailing Directions, Coast Pilots, International Signal Codes, etc.

Complete assortment of these goods in our Marine Catalog. If interested send for it.

MARINE GLASSES

THESE GLASSES ARE OUR OWN IMPORTATION FROM THE CELEBRATED MAKERS LEFEVRE, LEMAIRE AND BARDOU

All Our Glasses Are Furnisned with Leather Case and Strap

Description	24 Lignes Each	26 Lignes Each
1. Short Body, brass, oxidized, leather covered	$7.50	$8.25
2. Short Body, brass, oxidized, leather covered, with eye shades, especially constructed for use on water	12.75	14.25
3. Same as our No. 2, with exception of aluminum mounting, making a much lighter weight glass	20.25	22.50
4. Large Oculars, aluminum mounting, preferred by habitual users as being more restful to the eyes	14.25	15.75
5. Black Japanned Brass Body, leather covered with double extension, facilitating the focusing with eye shades	18.75	20.25
6. Black Oxidized Brass Body, leather covered, lenses of superior quality, good glasses for general use	17.00	18.50
7. Grand Power. This is the most powerful glass made in power, breadth of field of vision and clear definition	.....	23.50
8. The U. S. Signal Service day and night glass, used by the army and navy	20.25	21.75

CHELSEA CLOCKS

MARINE

Time Clock

Showing Base

Striking Ship Bell

Cases are solid brass, highly polished. Bases are polished mahogany and cast brass, finished same as clocks.

The finest clocks made, perfect timekeepers and beautiful ornaments to an engine room, yacht or residence

EIGHT DAY MOVEMENTS

Size Face Inches	Time Clock		Striking Ship's Bell Clock		Extra for Base
	Screw Bezel	Hinged Bezel with Lock and Key	Screw Bezel	Hinged Bezel with Lock and Key	
4½	$21.00	$24.00	$42.00	$45.00	$9.00
6	23.00	26.00	47.00	50.00	12.00
8½	.....	33.00	.....	55.00	17.00
10	.....	42.00	.....	60.00	27.00

For use in dynamo rooms, we can furnish non-magnetic at $1.00 net, extra.
Screw bezel is screw door which covers face; hinge bezel is hinge door which covers face.

Motor, Polished Yellow Brass

AUTO-BOAT MOTOR CLOCK

Eight day, screw bezel, water-tight case, 3½ in. dial ..... each $24.00

SPECIAL AUTO-BOAT CLOCK

Eight-day, screw bezel, water-tight case, 2¾ in. dial ..... each $36.00

This clock is of highest type, has an outer case, secured and locked. Its inner case containing the clock can be removed from the outer case and makes an attractive clock for use on desks, mantels, bureaus, etc., etc., a feature appreciated by tourists. When in outer case, it shows dial on angle (see cut).

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

Special Polished Yellow Brass

MARINE CLOCKS

Navy Lever

Engine Lever

NICKEL PLATED CASES

Navy Lever Movement, winds through side of case and has a jeweled escapement. Snap bezel fitted with safety chains to prevent breakage if bezel slips out of hand while being removed. 6-inch silvered dial, one-day time, brass case $16.50

Ship's Bell, 6-inch, one-day, strike, metal case, nickel plated 8.25

Engine Lever, 6-inch dial, one-day time, nickel plated 4.30

Engine Lever, 6-inch dial, eight-day time, nickel plated 6.40

Banner Lever, 6-inch dial, one-day time, nickel plated 4.30

Banner Lever, 6-inch dial, one-day strike, nickel plated 4.95

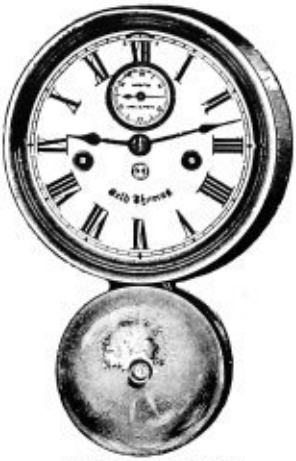
Banner Lever, 8-inch dial, one-day time, nickel plated 4.95

Banner Lever, 8-inch dial, one-day strike, nickel plated 5.60

Banner Lever, 6-inch dial, eight-day time, nickel plated 6.40

Banner Lever, 8-inch dial, eight-day time, nickel plated 7.20

Banner Lever, 8-inch dial, eight-day strike, nickel plated 8.95

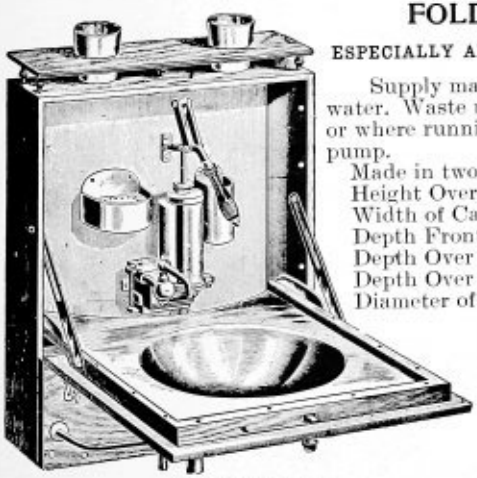


Ship's Bell Lever

Banner Lever

FOLDING LAVATORY

ESPECIALLY ADAPTED FOR YACHT AND HOUSE



Style No. 102

Supply may be taken either from tanks or from out board if boat is on fresh water. Waste may be discharged wherever most convenient. If used in house or where running water may be had, we can furnish with cock only in place of pump.

Made in two sizes	No. 1	No. 2
Height Over All	19½ inches	22 inches
Width of Case	15 "	17 "
Depth Front to Back	3½ "	4½ "
Depth Over All to Face of Basin	5½ "	6½ "
Depth Over All when Open	16½ "	19 "
Diameter of Basin	10 "	12 "

	No. 1	No. 2
Quartered Oak, No. 1 Polish Finish	$37.50	$42.50
Mahogany, with No. 1 Polish Finish	39.00	44.50

MARINE CLOSETS

The "Knockabout" Improved Pump Water Closet

With Vitro Adamant round flushing rim bowl, having a refill chamber; composition foot valve. Oak, cherry, or ash seat and cover, with rubber bumpers and heavy nickel-plated brass post hinges.

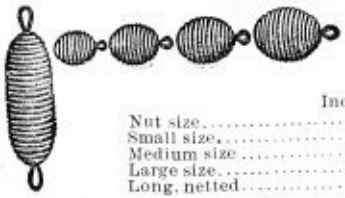
2½-inch Cylinder; space occupied, 14x18 inches. Height to top of bowl, 11½ inches; to top of pump handle, 14 inches; total weight, 27 pounds; all parts of pump composition. Porcelain bowl, flushing rim. High grade in every particular. Where small or light-weight closet is desired, this fixture is unsurpassed, combining all the practical sanitary features of the larger styles with economy in space and weight.

Pump rough, finished trimmings $52.50
Pump finished white enamel, nickel-plated trimmings 57.50
Pump polished and nickel plated all over 62.50
If with mahogany seat and cover, add 1.50

Complete assortment of these goods in our Marine catalogue. If interested send for it.

FENDERS

NETTED ROPE—CORK-FILLED
Hand Made



	Inches Long	Each
Nut size	16	$2.75
Small size	18	3.00
Medium size	20	3.25
Large size	22	3.75
Long, netted	27	5.00

ROUND SENNET MANILA
Hand Made

No. 0.	12 inches long	each	$0.60
No. 1.	16 " "	"	.75
No. 2.	18 " "	"	1.00
No. 3.	20 " "	"	1.20

RING BUOYS

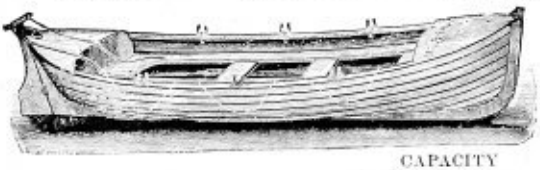
	Each
Yacht size, outside diameter, 19 inches	$1.75
" " " " 21 "	2.00
" " " " 24 "	2.25
Steamer size, " " 27 "	2.50
" " " " 30 "	2.75
	3.00

Printed and lettered if desired.

LIFE PRESERVERS

	Each
Block Cork	$1.25
Never Sink Cork Jackets	1.50

Every Preserver is stamped with the United States Steamboat Inspector's brand as having passed government inspection.



METALLIC LIFE BOATS

Approved and recommended by the Board of Supervising Inspectors of Steam Vessels.

SIZES AND CAPACITY OF LIFE BOATS
For Vessels Over 150 Tons

Length	Beam	Depth	Capacity Cubic Feet	Capacity On Ocean, Bay, Lake & Sound	Capacity On Rivers
10 ft.	x 3 ft. 6 in.	x 1 ft. 6 in.	32— 3	4 persons	
12 "	x 4 " 0 "	x 8 " 8 "	48— 5	" 6	"
14 "	x 4 " 6 "	x 2 " 0 "	76— 7	" 9	"
14 "	x 5 " 0 "	x 2 " 2 "	91— 9	" 11	"
16 "	x 5 " 0 "	x 2 " 0 "	96—10	" 12	"
16 "	x 5 " 6 "	x 2 " 3 "	120—12	" 15	"
18 ft.	x 5 ft. 6 in.	x 2 ft. 3 in.	134—13	persons, 17	persons
20 "	x 6 " 0 "	x 2 " 6 "	180—18	" 22	"
22 "	x 6 " 0 "	x 2 " 6 "	198—20	" 25	"
24 "	x 6 " 6 "	x 2 " 6 "	234—23	" 29	"
26 "	x 6 " 6 "	x 2 " 6 "	253—25	" 31	"
28 "	x 7 " 0 "	x 3 " 0 "	353—35	" 44	"

For Vessels under 150 Tons (Gross)

One-third the boat capacity required may be substituted by its equivalent in approved life rafts.

Number of Tons (Gross)	Number of Boats	Dimensions Length	Breadth		Depth		Factor	Contents
Steamers over—		Feet	Ft.	In.	Ft.	In.		Cubic Ft.
100 and not over 150	1	20	5	6	2	6	.6	165.0
50 and not over 100	1	18	5	6	2	3	.6	134.0
30 and not over 50	1	16	5	6	2	3	.6	120.0
10 and not over 30	1	14	5	0	2	2	.6	90.0
0 and not over 10	1	14	4	6	2	0	.6	75.6

AUTOMATIC BOAT PLUGS

Size	Diam. of Opening	Diam. of Flange	Plain Brass
No. 1	$\frac{3}{4}$ inch	$2\frac{1}{4}$ inches	$1.50 each
No. 2	$1\frac{1}{4}$ "	$3\frac{5}{8}$ "	2.00 "

CLARK'S PATENT METALLIC LIFE RAFT

Approved by the United States Board of Supervising Inspectors of Steam Vessels.
Each raft is furnished with oars, oar-locks, life lines, and buoys.

Revised List, 1898

Capacity in Persons	Dimensions of Rafts Width Feet	Inch	Length Feet	Inch	Floats No.	Diam. inch	Length inch	Cap. in Cub. Ft. In Foats	Requ'd by Law	Weight in Pounds Metal	Wood	Raft Comp'e	Surf. Area, Sq. Ft. For Ea. Person	Of Raft	Price	Cap'ty in Persons
4	3	1	6	2	9	11	22	10.89	9.99	70	110	180	4.75	19.00	$30.00	4
5	3	1	7	2	9	11	26	12.87	12.48	83	117	200	4.42	22.10	35.00	5
6	4	....	6	5	12	11	23	15.18	15.00	94	136	230	4.24	25.66	40.00	6
8	4	4	7	2	12	12	26	20.42	20.00	104	151	255	3.90	31.05	50.00	8
10	4	4	8	10	16	12	24	25.12	24.96	140	175	315	3.83	38.30	60.00	10
15	5	....	11	3	15	15	24.5	37.58	37.44	192	230	422	3.75	56.25	75.00	15
20	6	6	11	3	20	15	24.5	50.11	49.92	238	264	502	3.70	74.12	90.00	25
25	8	7	11	3	25	15	24.5	62.64	62.40	300	330	630	3.86	96.56	110.00	25
30	8	7	13	5	30	15	24.5	75.17	74.88	356	369	725	3.86	115.87	125.00	30
35	8	7	15	8	35	15	24.5	87.68	87.36	412	448	860	3.85	134.70	140.00	35
40	8	7	17	10	40	15	24.5	100.22	99.84	468	497	965	3.82	153.07	160.00	40

To get capacity in persons for salt water, multiply cubic feet in floats by 0.34133. Other sizes and proportions made to order.

YACHT AND SHIP BELLS

GENUINE BELL METAL

Weight, pounds	Diameter, inches	Bright, Each	Polished, Each
13	8½	$5.70	$8.50
16	9½	7.05	11.35
20	10½	8.70	12.35
25	11	10.90	15.00
30	12	13.00	17.90
35	12½	15.25	20.70
40	13	17.45	23.55
50	14	21.80	28.55
60	15	26.15	33.00
70	16	30.55	37.75
80	17	34.80	42.35
100	17½	43.60	51.42

SIGNAL AND BINNACLE BELLS

PLAIN AND POLISHED—Made of Best Bell Metal

With Stationary Bracket

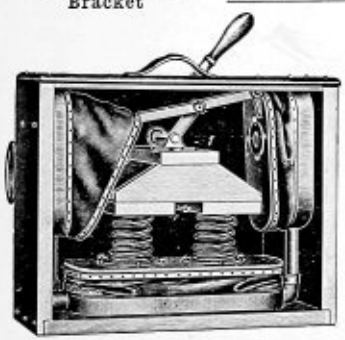
Diameter of Opening, inches	Plain, Each	Polished, Each
5	$3.75	$5.00
6	4.75	6.00
7	6.25	8.00
8	9.00	12.00
9	13.00	18.00
10	15.00	20.00
11	20.00	25.00

With Detachable Bracket

With Detachable Bracket			With Stationary Bracket		
Diameter of Opening inches	Plain Each	Polished Each	Diameter of Opening inches	Plain Each	Polished Each
5	$3.00	$4.00	5	$2.75	$3.75
6	4.00	5.00	6	3.50	4.50
7	5.50	7.00	7	5.00	6.50
8	8.00	10.00	8	7.50	9.50
9	13.50	15.00	9	12.00	14.00
10	14.00	17.00	10	13.00	16.00
11	18.00	22.00	11	17.00	21.00

With Stationary Bracket

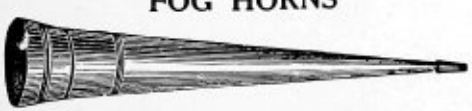
LOTHROP'S FOG HORN



Cut shows Interior Arrangement

Style	Length inches	Width inches	Height inches	Weight pounds	Price Each
Boat	17½	9	10½	19	$12.00
Yacht	17½	9	15	26	12.50
Vessel	20½	9½	16¾	33	15.00
Double Horn	20½	9½	18	39	20.00

FOG HORNS

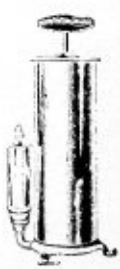


Extra Quality Tin
Wood Mouthpiece and Brass Reed

Inches long.	20	24	30	36	40
Tin, per doz.	$6.00	6.50	7.25	7.75	10.25
Brass, "	$18.00	20.00	....	....	....

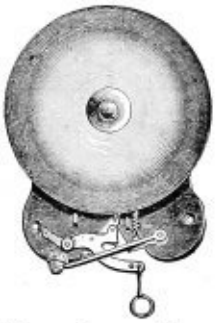
HAND LAUNCH WHISTLES

Diameter inches	Height inches	Polished Brass Each	Nickel Plated
4	15	$6.00	$8.00
5	17	18.00	24.00



NOTE.—5 inch whistle has whistle valve on top of cylinder.

Complete Assortment of these goods in our Marine Catalog. If interested, send for it.



TRIP GONGS

POLISHED BELL METAL

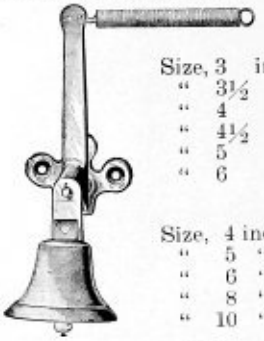
These trip gongs pull from the center and the mechanism is all concealed under the bell.

Diam., in...	3	4	5	6	7	8
Per doz.....	$10.00	13.50	17.50	24.00	34.00	46.00
Diam. in.....	10	12	14	16	18	
Per doz.....	$84.00	150.00	212.00	260.00	310.00	

JINGLE BELLS

POLISHED BRASS BELLS, ROLLED BRASS CARRIAGES

The clappers are suspended from a heavy brass loop cast into the bell.



Jingle Bells

Size, 3	inches	each,	$1.35
" 3½	"	"	1.60
" 4	"	"	2.00
" 4½	"	"	2.25
" 5	"	"	2.50
" 6	"	"	3.50

Bell Springs

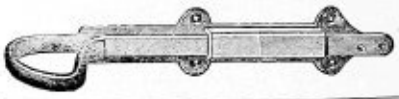
Size, 4	inches.....	per doz.,	$1.00
" 5	"	"	1.25
" 6	"	"	2.00
" 8	"	"	4.00
" 10	"	"	5.00

BELL CRANKS

Side or Flat

End or Upright

Size	Length of Crank, inches	Side or Flat each	End or Upright each
No. 1	3	$0.40	$0.50
No. 2	3¾	.50	.60
No. 3	4½	.60	.75



BRASS BELL PULLS

Size	Dimen. inch pull	Each	Size	Dimen. inch pull	Each
No. 0	2	$0.75	No. 2	3½	$1.00
No. 1	2½	.90	No. 3	3¾	1.25

POST BELL PULLS

For use on bridge or pilot house. Bronze finish, highly polished, length 17 inches, each $5.00.

IMPROVED STEEL AMALGAM BELLS

ADAPTED FOR FACTORIES, CONTRACTORS, SCHOOLS, ETC.

Style No. 1

Style No. 1

Steel amalgam Bell, iron frame supporting yoke from which bell is hung. Arm for attaching bell rope. All bells handsomely gilded.

Style No.	Diameter inches	Approximate Weight, lbs.	Each
1	15	40	$4.00
1	17	50	5.00
1	19	75	7.50
1	21	100	0.00

Style No. 2

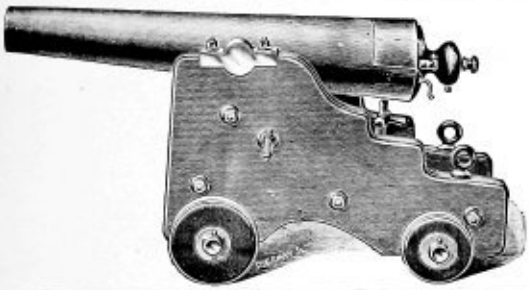
Style No.	Diameter inches	Approximate Weight of Bell only, lbs.	Approximate Weight Complete, lbs.	Each
2	18½	65	172	$16.00
2	21	80	186	20.00
2	24	134	240	25.00
2	28	247	396	40.00
2	30	325	487	50.00
2	33	414	689	75.00

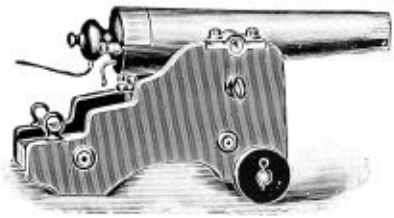
Tolling attachments for Nos. 6 and 7, $4.00 extra list; No. 8, $5.00 extra list.

Style No. 2

BRASS YACHT CANNON

POLISHED MAHOGANY CARRIAGE





Breech-Loading, New Model

Length inches	Shell No.	Charge	For Yacht feet	2-Wheel Carriage Price	4-Wheel Carriage Rubber Tires Price
13	10	8 drams	12 to 30	$25.00	$28.00
15	8	10 "	20 " 40	45.00	50.00
18	8	12 "	25 " 40	55.00	60.00
20	4	20 "	35 " 60	75.00	80.00
25	3	1/8 lb.	46 " 85	125.00	135.00
28	2½	1/6 "	65 " 100	185.00	195.00
32	2	1/4 "	90 " 150	225.00	250.00
36	1	1/3 "	150 and over	.....	350.00
42	0	3/4 "	175 "	.....	450.00
54	00	1 "	200 "	.....	800.00

WADS

For No. 8	Shell	per 1,000	$0 90
" " 3	"	"	7.25
" " 2	"	"	8.25
" " 4	"	"	1.20
" " 2½	"	"	7.75

POLISHED HARD WOOD AMMUNITION BOXES

(Brass Fitted, holding about 25 Shells.)

For 18-inch Cannon	each	$9.25
" 20 " "	"	10.35
" 25 " "	"	12.35
" 28 " "	"	14.20
" 32 " "	"	15.45
" 36 " "	"	22.75
" 42 " "	"	30.00
" 54 " "	"	36.25

These boxes furnish a neat, complete and compact receptacle for the loading tools, shells, etc., accompanying our Yacht Cannon, protecting the same from damage or loss.

BLANK AMMUNITION FOR SALUTING CANNON

Gauge No.	Length inches Brass	Length inches Paper	Charge	Not Loaded Brass	Not Loaded Paper	Loaded, Paper, per 100
10	3¼	3¼	8 drams	$10.50 per 100	$13.00 per 1,000	$3.00
8	3¼	3¼	12 "	20.00 "	25.00 "	5.00
4	4	4	20 "	28.00 "	36.00 "	9.00
3	4¼	4¼	1/8 lb.	1.00 each	15.00 per 100	25.00
2½	5	5	1/6 "	1.15 "	16.00 "	26.50
2	5	5	1/4 "	1.25 "	17.50 "	27.50
1	5½	....	1/3 "	1.75 "	.....	.....
0	6	....	3/4 "	2.00 "	.....	.....
00	7	....	1 "	2.00 "	.....	.....

No. 2 Primers are used in every size shell...$2.00 per 1,000.
Price of Loaded Brass Shells on application.

MEGAPHONES

STENTOR

These are the best Megaphones it is possible to make, and are designed particularly for marine use and wherever the highest quality is required. Made of special fibre; mouth-piece, base binding and handle are brass, nickel plated. Mouth-piece and base binding are patented, and are so securely fastened that they cannot come off. The color is maroon.

No. 1	15-inch, each	$1.50	No. 3	40-inch, each	$3.50
No. 1½	22 " "	2.00	No. 5	48 " "	7.00
No. 2	30 " "	2.50	No. 7	60 " "	10.00
No. 2½	34 " "	3.00			

VICTOR

These Megaphones are designed to meet the requirements of the sporting goods trade. They have the same patent mouth-piece and base binding as our Stentor Megaphones, and are similar in all particulars except the color, which is yellow. Both materials and workmanship are first class, and the patented features make this line better than the best Megaphones offered by other manufacturers.

No. 11	15-inch, each	$1.35	No. 12	30-inch, each	$2.25
No. 11½	22 " "	1.75	No. 12½	34 " "	2.75
			No. 13	40-inch, each	$3.25

Junior

This Cut Illustrates Both Lines

JUNIOR MEGAPHONES. Stock color reddish brown. Can be furnished to order in any color.

No. 0, 12-inch, each.....$0.25 No. OX 20-inch.....$0.50

BOAT OARS AND SCULLS

STRAIGHT GRAINED ASH

Length ..... feet	5 to 10	11 and 12	13 and 14	15 and 16	17 and 18
Plain ..... per foot	$0.10	$0.10½	$0.12	$0.12½	$0.13½
Copper Tipped ..... "	.10¾	.11	.12½	.13	.14

STRAIGHT SPRUCE OARS

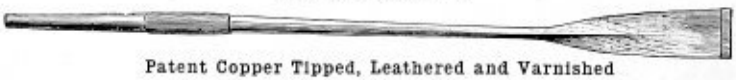
Lengths 6 to 10 feet

Copper Tipped ..... per foot, $0.12
Leathered, Varnished, and Copper Tipped ..... " .15

SPOON OARS

Selected Spruce

Lengths 6 to 10 feet

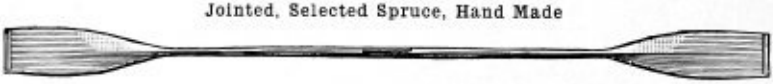


Patent Copper Tipped, Leathered and Varnished

Per foot $0.20
Rubber Rings, per pair ..... .25

DOUBLE PADDLES

Jointed, Selected Spruce, Hand Made

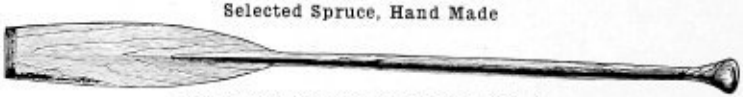


Patent Copper Tipped, Varnished and Nickel Plated Mountings

8 to 9½ feet ..... each, $4.00
Rubber Drip Cups ..... pair, .35

SINGLE PADDLES

Selected Spruce, Hand Made



Patent Copper Tipped and Varnished

Length, 4, 4½, 5, 5½ feet ..... each, $1.50

PUSH PADDLES

Best Straight Grained Ash

Length 10 to 12 feet ..... per foot, $0.15

CAPSTAN BARS AND HAND SPIKES

Length 3 to 8 feet ..... per foot, $0.12
" 9 " ..... " .15
" 10 " ..... " .18

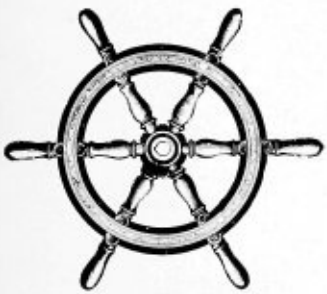
For Row Locks, see pages 599 to 601

IMPROVED IRON STEERING WHEEL

Made of the Best Cast Iron with Steel Spokes, Black Walnut Handles and Brass Caps

Diam. inches		No. of Spokes	Plain Each	Galvanized Each
12	With Galvanized Handles	6	.....	$1.50
16	" " "	6	.....	2.00
12	" Wood Handles, Brass Tips	6	.....	2.00
16	" " " " "	6	.....	2.75
20	" " " " "	6	.....	4.75
22	" " " " "	6	.....	5.25
25	" " " " "	6	.....	5.75
28	" " " " "	6	.....	7.00
30	" " " " "	8	$10.00	11.25
36	" " " " "	8	12.00	13.50
42	" " " " "	8	15.00	17.50
48	" " " " "	8	18.00	21.00

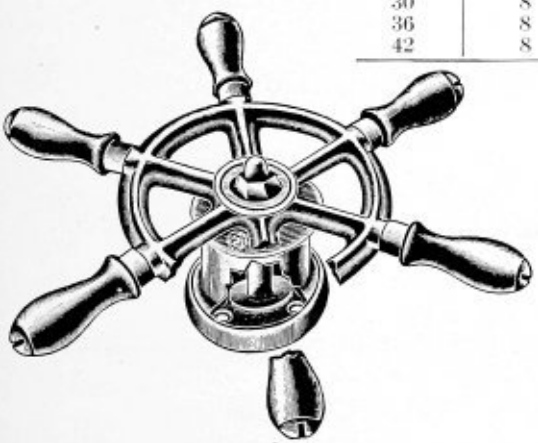
Wheels are measured between extreme end of handles.



MAHOGANY AND ROSEWOOD STEERING WHEEL

With Polished Brass Cheeks and Hub

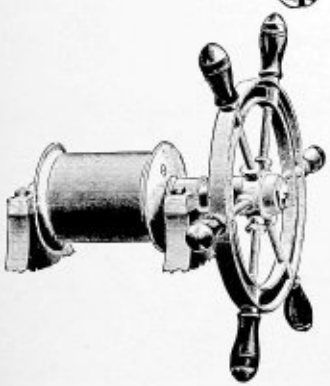
Diameter of Wheel inches	Number of Spokes	With Mahogany Rim Spokes and Handles Each	With Mahogany Rim Rosewood Spokes and Handles, Each	With Ebonized Rim Mahogany Spokes and Handles, Each	With Ebonized Rim Rosewood Spokes and Handles, Each
19	5	$11.85	$11.85	$11.85	$11.85
20	6	13.50	13.50	13.50	13.50
24	6	15.75	15.75	15.75	15.75
28	6	20.25	20.25	20.25	20.25
30	6	25.85	25.85	25.85	25.85
30	8	28.25	28.25	28.25	28.25
36	8	36.00	36.00	36.00	36.00
42	8	47.25	47.25	47.25	47.25



LAUNCH STEERING WHEELS

Complete with Drum
ROUND SPOKES

Size of Wheel	Size of Drum		Each
	Extreme Length	Extreme Diameter	
12 in. Galv. Iron Wheel with Wood Handle	3	2⅞	$2.75
16 in. Galv. Iron Wheel with Wood Handle	3⅝	3	3.45
20 in. Galv. Iron Wheel with Wood Handle	4½	5	8.30



STEERING WHEELS

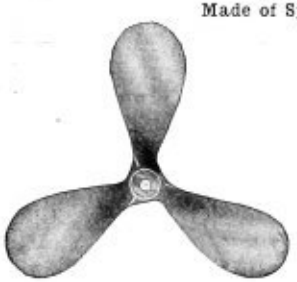
With Drum and Boxes

No.	Size of Wheel inches	Size of Drum		Length from Forward Box to Wheel inches	Each	
		Diameter inches	Length inches		Mahogany or Rosewood Wheel	Galvanized Iron Wheel
4	20	4¼	5	1	$16.50	$9.00
5	22	4½	6	1½	20.00	11.00
6	25	6	7	1½	23.50	13.50
7	28	6½	8½	1¾	29.50	16.50
8	30	7	10	2	.....	20.00
9	36	8	12	2¼	.....	25.00
10	42	9	14	2¼	.....	30.00

Drums of any Dimensions made to order. Complete assortment of these goods in our Marine Catalog. If interested, send for it.

SOLID SPEED PROPELLER WHEELS

Made of Special Propeller Wheel Bronze, Highly Polished and Lacquered



Two and Three-Blade Solid Propeller Wheels are designed and built on the true screw pitch and are the best all-around speed wheels yet produced for speed ahead and backing up. They have given the best results of any solid wheel yet produced for all-around work in use on pleasure yachts, launches or working boats.

NOTE. — When installing solid wheels the crowning side of the blades should be next to the boat, the flat side aft, which is the pushing or working side.

BRONZE

TWO BLADES — **Right and Left Hand** — **THREE BLADES**

Diam. Inch	Pitch	Each	Extra bored and key Seat	H. P. 100 Rev.	H. P. 400 Rev.	Diam. Inch	Pitch	Each	Extra bored and key Seat	H. P. 100 Rev.	H. P. 400 Rev.
10	14.0	$2.61	$0.90	.20	¾	12	16.8	$5.10	$1.10	.5	2
11	15.0	2.82	1.00	.25	1	14	19.6	6.00	1.30	.75	3
12	16.8	3.20	1.10	.40	1½	16	22.4	7.80	1.40	1.25	6
13	18.2	3.81	1.20	.45	1¾	18	25.2	9.90	1.50	2.25	9
14	19.6	4.50	1.30	.60	2	20	28.0	12.00	1.75	3.	12
16	22.4	5.10	1.40	1.	4	22	30.8	15.00	2.00	4.	16
18	25.2	6.66	1.50	1.5	6	24	33.6	18.90	2.25	6.	24
20	28.0	9.00	1.75	2.25	9	26	36.4	24.00	2.50	7.5	30
22	30.8	12.00	2.00	3.	12	28	39.2	28.00	2.75	9.	36
24	33.6	15.00	2.25	4.	16	30	42.0	33.00	3.00	10.	40
26	36.4	18.00	2.50	6	24	33	46.2	45.00	3.50	12.	48
28	39.2	22.50	2.75	7.5	30	36	50.4	51.00	4.00	15.	60
30	42.0	27.00	3.00	9.	36	40	56.0	90.00	6.00	20.	80
33	46.2	30.30	3.50	10.	40	44	61.6	118.00	7.00	25.	100
36	50.4	41.00	4.00	12.	48	48	77.2	135.00	8.00	30.	120

Specify Right or Left hand. Be sure and specify diameter of Shaft, bored and key seated, straight and taper.

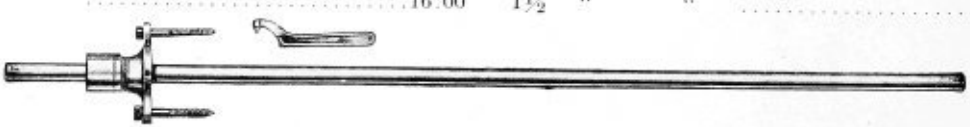
SOLID PROPELLER WHEEL SHAFT

Outfit "M"

Style "M" outfit includes 6 feet of shaft, 3 feet of brass sleeve bronze inner stuffing box stern bearing babbitted with bronze lag bolts complete.

Sizes and Prices

⅝ Steel Shaft	$4.98	⅝ Tobin Bronze Shaft	$7.74
¾ "	6.47	¾ " "	10.43
1 "	8.92	1 " "	15.94
1¼ "	12.08	1¼ " "	22.88
1½ "	16.00	1½ " "	31.48



Outfit "N"

Style "N" outfit includes 6 feet of shaft, bronze combination stern bearing or stuffing box babbitted, bronze lag bolts and spanner wrench.

Sizes and Prices

⅝ Steel Shaft	$2.64	⅝ Tobin Bronze Shaft	$5.40
¾ "	3.42	¾ " "	7.38
1 "	4.83	1 " "	11.85
1¼ "	6.60	1¼ " "	17.40
1½ "	8.52	1½ " "	24.00

SOCKET ROWLOCKS

Galvanized Iron and Brass. Standard Pattern

We do not recommend cast iron rowlocks. All Rowlocks are Listed per Pair.

Size	Width Between Horns, inches	Malleable	Cast	Plain Brass	Polished Brass	Nickel Plated
No. 0	1¾	$0.30	$0.20	$0.75	$1.25	$1.75
" 1	2	.35	.25	.90	1.40	1.90
" 1½	2⅛	.45	.30	1.10	1.60	2.10
" 2	2¼	.50	.40	1.50	2.00	.....
" 3	2½	.65	.55	2.00	2.60	.....
" 4	3	.90	.75	2.50	3.20	.....

Extra Sockets

Size	Malleable	Cast	Plain Brass	Polished Brass
No. 0	$0.15	$0.08	$0.30	$0.50
" 1	.15	.11	.30	.50
" 1½	.20	.13	.35	.60
" 2	.25	.18	.50	.75
" 3	.27	.25	.60	1.00
" 4	.35	.27	.70	1.25

Extra Horns

Size	Malleable	Cast	Plain Brass	Polished Brass
No. 0	$0.20	$0.15	$0.50	$0.80
" 1	.25	.17	.70	.95
" 1½	.30	.22	.85	1.15
" 2	.35	.27	1.10	1.30
" 3	.48	.40	1.60	1.80
" 4	.65	.55	2.05	2.25

RIBBED SOCKET ROWLOCKS

Galvanized Iron and Brass

Size	Width Between Horns, inches	Malleable	Cast	Plain Brass
No. 0	1¾	$0.25	$0.15	$0.70
" 1	2	.30	.20	.80
" 2	2¼	.40	.30	1.30
" 3	2⅝	.60	.50	1.80
" 4	3	.80	.65	2.30

Extra Horns

Size	Malleable	Cast	Plain Brass
No. 0	$0.16	$0.11	$0.45
" 1	.20	.15	.60
" 2	.30	.22	.95
" 3	.45	.37	1.35
" 4	.58	.48	1.75

Extra Sockets

Size	Malleable	Cast	Plain Brass
No. 0	$0.10	$0.06	$0.30
" 1	.12	.08	.30
" 2	.15	.12	.45
" 3	.25	.18	.65
" 4	.32	.25	.85

Side Plate

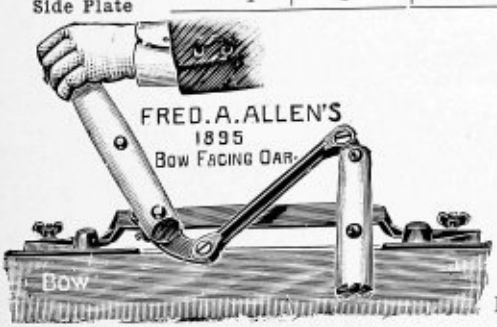
ROUND ROWLOCKS—Side Plate

Size	Diameter of Hole in the Clear, inches	Malleable Iron	Cast Iron	Plain Brass	Polished Brass
No. 0	2	$0.45	$0.30	$1.15	$1.65
" 1	2¼	.50	.35	1.25	1.75
" 2	2½	.60	.45	1.75	2.25

Socket

Size					
No. 0	2	$0.35	$0.20	$0.90	$1.40
" 1	2¼	.40	.25	1.00	1.50
" 2	2½	.50	.35	1.50	2.00
" 3	3	.....	.45	.....	.....
" 4	4	.....	.65	.....	.....

Socket



ALLEN'S BOW-FACING OARS

Rowing Gear, with copper tipped spruce blades, complete, 7 or 8 feet, and ready to screw on gunwale.....per set, $7.00

Rowing Gear Irons, (without blades)..... 6.00

Extra Spruce Oars .....per foot, .15

Pocket Oil Cans .....each, .25

In ordering, mention beam of boat.

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

Socket

NORTH RIVER ROWLOCKS

GALVANIZED IRON AND BRASS

All Rowlocks are Listed per Pair

Socket

Size between Horns	Malleable Iron	Cast Iron	Plain Brass	Polished Brass
2 inches	$0.40	$0.25	$1.25	$1.75

Side Plate

Size between Horns	Galvanized Malleable Iron	Galvanized Cast Iron	Plain Brass	Polished Brass
2 inches	$0.50	$0.35	$1.50	$2.00

Side Plate

PATENT SWIVEL ROWLOCKS

GALVANIZED IRON AND BRASS

Size Number	Size Between Horns Inches	Galvanized	Plain Brass	Polished Brass	Nickel Plated
0	1¾	$0.75	$1.50	$2.25	$2.75
1	2	.85	1.60	2.40	2.90
2	2¼	1.00	2.25	3.25	3.75
3	2½	1.25	2.50	3.50	....
4	2¾	1.50	2.75	3.75	....
5	3	1.75	3.00	4.00	....

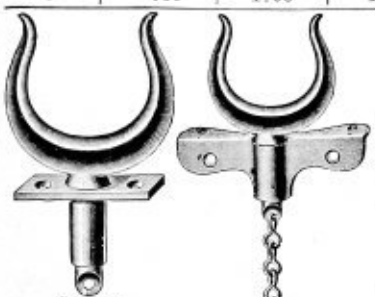
Polished brass and nickel plated packed one pair in box.

Plates Only

Size No.	Galvanized	Plain Brass	Polished Brass	Nickel Plated
0	$0.25	$0.50	$0.75	$0.90
1	.28	.55	.80	1.00
2	.35	.75	1.10	1.25
3	.40	.85	1.15	....
4	.50	.90	1.25	....
5	.60	1.00	1.35	....

Horns Only

Size No.	Galvanized	Plain Brass	Polished Brass	Nickel Plated
0	$0.50	$1.00	$1.50	$1.80
1	.55	1.05	1.60	1.95
2	.65	1.50	2.15	2.50
3	.80	1.65	2.30	....
4	1.00	1.80	2.50	....
5	1.15	2.00	2.65	....



Socket

Side Plate

Extra Long Side Plate

BOSTON PATTERN ROWLOCKS

GALVANIZED IRON AND BRASS

Socket with Chain

Size No.	Size Between Horns In.	Galvanized Malleable Iron	Plain Brass	Polished Brass	Nickel Plated
0	1¾	$0.35	$1.00	$1.50	$2.00
1	2	.40	1.25	1.75	2.25
2	2¼	.55	1.75	2.25	2.75

Socket without Chain

Size No.	Size Between Horns In.	Galvanized Malleable Iron	Plain Brass	Polished Brass	Nickel Plated
0	1¾	$0.25	$0.75	$1.25	$1.75
1	2	.30	1.00	1.50	2.00
2	2¼	.40	1.50	2.00	2.50

Side Plate with Chain

Size No.	Size Between Horns In.	Galvanized Malleable Iron	Plain Brass	Polished Brass	Nickel Plated
0	1¾	$0.50	$1.25	$1.75	$2.25
1	2	.60	1.50	2.00	2.50
2	2¼	.75	2.00	2.50	3.00

Side Plate without Chain

Size No.	Size Between Horns In.	Galvanized Malleable Iron	Plain Brass	Polished Brass	Nickel Plated
0	1¾	$0.40	$1.00	$1.50	$2.00
1	2	.50	1.25	1.75	2.25
2	2¼	.60	1.75	2.25	2.75

Extra Long Side Plate with Chain

Size No.	Size Between Horns In.	Galvanized Malleable Iron	Plain Brass	Polished Brass	Nickel Plated
0	1¾	$0.60	$1.50	$2.00	$2.50
1	2	.75	1.75	2.25	2.75
2	2¼	.90	2.25	2.75	3.25

Extra Long Side Plate without Chain

Size No.	Size Between Horns In.	Galvanized Malleable Iron	Plain Brass	Polished Brass	Nickel Plated
0	1¾	$0.50	$1.25	$1.75	$2.25
1	2	.60	1.50	2.00	2.50
2	2¼	.75	2.00	2.50	3.00

Complete assortment of these goods in our marine catalog. If interested, send for it.

STANDARD SIDE PLATE ROWLOCKS

GALVANIZED IRON AND BRASS

All Rowlocks Listed per Pair

Size No.	Width Between Horns Inches	Malleable Pair	Cast Iron Pair	Plain Brass Pair	Polished Brass Pair
00	1½	$0.35	$0.20	$1.00	$1.25
0	1¾	.40	.25	1.10	1.50
1	2	.50	.35	1.50	2.00

HORNS ONLY

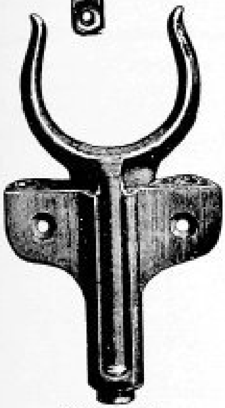
Size No.	Malleable Pair	Cast Iron Pair	Plain Brass Pair	Polished Brass Pair
00	$0.20	$0.12	$0.55	$0.85
0	.30	.16	.75	1.00
1	.40	.25	1.15	1.40

SOCKETS ONLY

Size No.	Malleable Pair	Cast Iron Pair	Plain Brass Pair	Polished Brass Pair
00	$0.15	$0.09	$0.35	$ 0.55
0	.20	.12	.40	.60
1	.25	.15	.55	.75

ACME PATENT ROWLOCKS

Galvanized Malleable Iron and Brass



In Position

Out of Position

Size No.	Width Between Horns Inches	Malleable Iron Pair	Plain Brass Pair	Polished Brass Pair
0	1¾	$0.70	$1.50	$2.25
1	2	.85	1.60	2.40
2	2¼	1.00	2.25	3.25
3	2½	1.25	2.50	3.50
4	2¾	1.50	2.75	3.75
5	3	1.75	3.00	4.00
6	3½	2.25	3.75	5.00

SELF-ADJUSTING ROWLOCKS

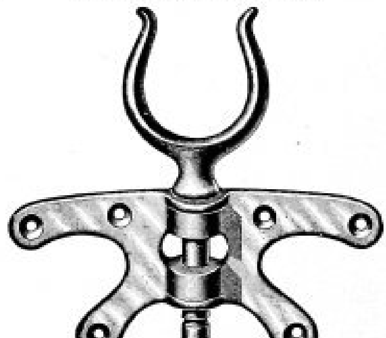
Galvanized Malleable Iron and Brass

Self Adjusting

Size No.	Width Between Horns Inches	Malleable Iron	Plain Brass Pair	Polished Brass Pair
0	1½	$0.50	$0.90	$1.50
1	2	.60	1.10	1.65
2	2¼	.70	1.80	2.25
2	2½	.85	2.25	2.80
4	3	1.00	2.75	3.50

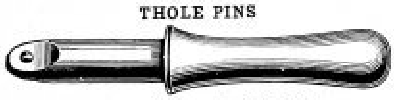
MOLINE SIDE-PLATE ROWLOCKS

Galvanized Malleable Iron

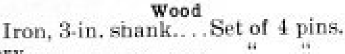


Width Between Horns, 1⅝ in. . $0.60

THOLE PINS



Galvanized Iron



Wood

Galv. Iron, 3-in. shank. . . . Set of 4 pins. $1.50
Hickory . . . . " " .20
Locust. . . . . " " .25

Kern

KERN'S PATENT DOUBLE MOTION ROWLOCKS

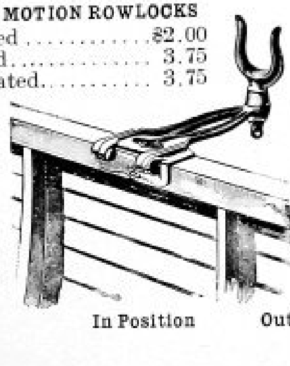
Malleable Iron, Galvanized $2.00
Polished Brass, Lacquered. 3.75
" " Nickel Plated. 3.75

OUTRIGGER ROWLOCKS

Adapted to all kinds of boats and canoes, but especially to light, narrow pleasure boats, as a longer oar can be used. They extend 7 inches beyond the gunwale of the boat. Width between horns, 1¾ inches.

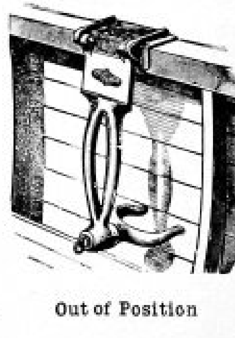
Galvanized Iron . . . . pair $2.00
Polished Brass. . . . . " 6.00
Nickel Plated. . . . . " 8.00

Complete assortment of these goods in our Marine Catalogue. If interested, send for it.



In Position

Outrigger



Out of Position

GROMMETS

SHEET BRASS WASHER

SHEET WASHER GROMMETS

No.	Diam. of Hole Inserted, inches	Per Gross
000	3/32	$0.40
00	1/8	.45
0	7/32	.50
1	5/16	.80
2	3/8	1.10
3	7/16	1.50
4	1/2	2.50
5	5/8	3.50

SHEET BRASS TEETH

No.	Diam. of Hole Inserted, inches	Per Gross
0	7/32	$0.60
1	5/16	.90
2	3/8	1.25
3	7/16	1.75
4	1/2	2.75
5	5/8	4.00

Cast Brass

CONICAL POINTED, ROLLED RIM BRASS GROMMETS

No.	Diam. of Hole Inserted, inches	Per Gross
2	3/8	$2.00
3	7/16	2.70
4	1/2	3.60
5	5/8	4.75
6	3/4	6.25
7	7/8	8.50
8	1 1/16	10.00

Sheet Brass

SHEET BRASS SPUR GROMMETS

No.	Diam. of Hole Inserted, inches	Per Gross
0	1/4	$1.60
1	5/16	1.80
2	3/8	2.00
3	7/16	2.70
4	1/2	3.60
5	5/8	4.75
6	3/4	6.25
7	7/8	8.50
8	1 1/16	10.00

SMALL OBLONG BRASS GROMMETS

	Size of Opening when Inserted	
No. 1.	11/16x3/16 in...	gross $1.75
No. 2.	5/8x1/4 in...	" 2.00

GALVANIZED GROMMET RINGS

In Bulk

Per Lb.		Per Lb.
1/4 in. inside dia....	$0.56	7/8 to 1 1/4 in. inside dia..	$0.40
5/16 " " "	.50	1 3/8 to 3 " " "	.40
3/8 to 3/4 in. inside dia.	45	.....	

GROMMET KNOBS

with Brass Head

For use with No. 3 Conical Pointed Rolled Rim or Spur Brass Grommets, for Carpets, Matting, etc., in railroad cars, steamboats, halls, and large rooms.

Per gross.....$3.00

SHEET BRASS EYELET GROMMETS

No.	Diam. at Bottom inches	Per Gross
1	3/8	$1.15
2	1/2	1.35
3	5/8	1.60
4	3/4	1.80
5	7/8	2.25
6	1	2.70
7	1 1/8	3.15
8	1 1/4	5.00
10	1 1/2	7.00
15	2 1/2	10.00

THREE-PART GROMMETS

No.	Diam. of Hole Inserted, inches	Per Gross	
		Galvanized Iron	Brass
1	1/4	$1.80	$1.80
2	5/16	2.00	2.00
3	3/8	2.70	2.70
4	1/2	3.60	3.60
5	5/8	4.75	4.75
6	3/4	6.00	6.25
7	13/16	7.50	8.50
8	15/16	8.50	10.00
9	1 1/16	10.00	12.00
10	1 1/4	11.00	14.00

BRASS MAIL BAG GROMMETS

Opening Inserted	
Small, 1 1/4x3/8	per gross, $5.00
Large, 1 5/8x7/16	" " 6.00

For Inserting Dies, see page 603

CUTTING PUNCHES

Regular

No.	Regular Each	Side Each
0	$1.00	$0.50
1	1.00	.50
2	1.20	.50
3	1.30	.65
4	1.50	.75
5	1.75	.80
6	2.00	1.00
7	2.25	1.50
8	2.50	1.75
9	2.75	2.25
10	3.00	2.50

Side

SETTING DIES

No.	For Washer and Teeth Grommets Each	For C. P. R. R. and Spur Grommets Each	For Eyelet Grommets Each
0	$2.00	$2.00	....
1	2.15	2.15	....
2	2.25	2.25	$2.25
3	2.35	2.35	2.35
4	2.50	2.50	2.50
5	2.70	2.70	2.70
6	....	2.80	2.80
7	....	3.00	3.00
8	....	3.25	3.25
9	....	....	3.50
10	....	....	4.50
15	....	....	15.00

INSERTING DIES AND CUTTERS

For Oblong and Mail Bag Grommets

For Small Oblong

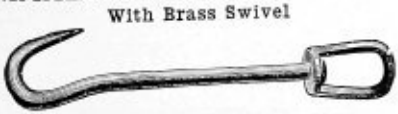
No.	Dies Each	Cutters Each
1	$5.00	$2.00
2	6.00	2.50

For Mail Bag Grommets Small and Large

Dies.....each $20.00
Cutters..... " 15.00

SAILMAKERS' STEEL BENCH HOOKS

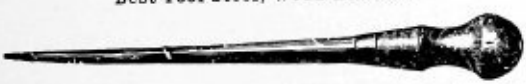
With Brass Swivel



Per dozen.....$1.50

SAILMAKERS' MARLINE SPIKES

Best Tool Steel, Wood Handles



No. 1. 13 in. long.....each $2.00
" 2. 14½ " " ..... " 2.25

FOOT POWER GROMMET SETTING MACHINE

HAND FEED

Fitted for No. 0 Grommet $65.00
Extra Die for No. 1 Grommet..... 8.50
Extra Die for No. 2 Grommet..... 10.00
Extra Die for No. 3 Grommet..... 12.00

CARPENTER'S Patent Combination Head Rod and Pulley Holder for Window Awnings

(Patent Applied For)

This fixture takes care of both the head rod and the pulleys, and remaining, as it does, fixed upon the window, it does away with all subsequent marring or defacing of the window casing when the awning is taken down or rehung. Price per doz.....$0.80

Carpenter's New Patent Awning Hook

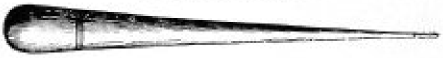
This is our new patent hook end, which we believe will be universally used by the awning trade as a substitute for and improvement on the old style eye end. Price per doz.....$0.50

SAILMAKERS' PRICKERS

Best Tool Steel, Wood Handles

No. 1. 10 inches long .....each $0.75
" 2. 10½ " " ..... " .90
" 3. 8 " " ..... " .40

HAND FIDS



Number	1	2	3	4	5
Length, inches	14	16	18½	20½	.22
Price, each	$0.50	.60	.75	1.00	1.25

STANDING FIDS

Number	1	2	3	4
Length, inches	30	32	36	40
Diameter, Butt, in	4	5	6	6½
Price, each	$2.00	2.50	3.00	3.50

TRAWL SPLICERS

BALL HEAD, POLISHED STEEL

Size, Number	Length, Inches	Per Dozen
1	4	$2.25
2	4½	2.50
3	7	3.00
4	7	3.50

No. 4 is extra steel and flat pointed for sail-makers' use.

WOOD HANDLE

Size, Number	Entire Length, In.	Per Dozen
1	4	$2.25
2	4½	2.50

SAILORS' PALMS

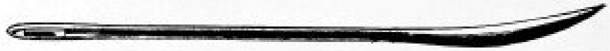
No.
1. Half Hide Mounted, Seaming......per doz. $1.50
2. Full " " " ...... " 2.00
3. Brass Mounted, Seaming.......... " 2.00
4. Hide and Brass Mounted, Seaming. " 2.25
5. " Mounted, Seaming, Buckle... " 2.50

Nos. 1 and 2 for left hand also.

SAILMAKERS' PALMS

Best Seaming..............................each $1.50
" Roping.............................. " 1.75

PACKING OR SACK NEEDLES



No.	Length Inches	Per 100	No.	Length Inches	Per 100
14	3	$1.80	9	5½	$3.50
13	3½	2.00	8	6	4.00
12	4	2.25	7	6½	4.50
11	4½	2.65	6	7¼	5.50
10	5	3.00	5	8½	8.00

3 dozen in a package.

SAIL NEEDLES

James Smith & Sons

Long Square

No.	Length Inches	Per 100	No.	Length Inches	Per 100	No.	Length Inches	Per 100
17	2¼	$1.50	14	2⅞	$1.65	10	4	$6.50
17½	2⅜	1.50	14½	3	1.75	9	4¼	7.50
16	2½	1.50	13	3 3/16	2.75	8	4½	8.50
16½	2⅝	1.50	12	3⅜	3.60	7	...	9.75
15	2 11/16	1.50	11	3⅝	5.50	6	...	11.00
15½	2¾	1.50	....	...	....	..	...	.....

25 in a Package.

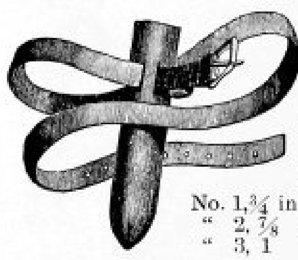
REDUCED EDGE SAIL NEEDLES

No. 17	16	16½	15	15½	per hd.	$1.70
" 14	14½	....	....	....	"	1.85
" 13	....	....	....	....	"	2.58

SPRING EYE SACKING NEEDLES

Length, inches	3	4	4½	5	5½	6
Price, per doz.	$1.00	1.15	1.20	1.25	1.40	1.50

SHEATHS AND BELTS

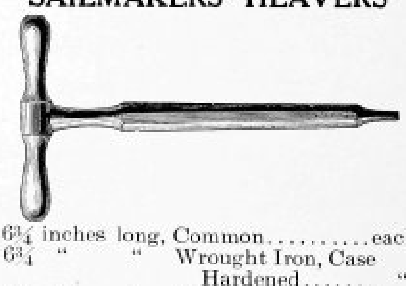


Dozen
No. 1. Common, ¾ inch wide. $2.75
No. 2. Medium, ⅞ inch wide. 3.50
No. 3. Extra, 1 inch wide.. 4.25

BELTS ONLY

Dozen
No. 1, ¾ inch wide...... ....$1.85
" 2, ⅞ " " 2.25
" 3, 1 " " 3.10

SAILMAKERS' HEAVERS



No. 1, 6¾ inches long, Common..........each $1.00
" 2, 6¾ " " Wrought Iron, Case Hardened....... " 1.75
" 3, 6¾ " " Best Tool Steel, well finished......... " 2.50

AWNING HARDWARE

AWNING SLIDE RODS

Galvanized Wrought Iron

⅜ inch diameter ..... per foot, $0.05½
½ " " ..... " .09

AWNING CLEATS

Galvanized Malleable Iron and Brass

Number	Length	Takes Screw	Galvanized per dozen
1	4½	⅞ x No. 10	$0.20
2	6	⅞ x No. 12	.35
3	8	1 x No. 12	.50
4	10	1¼ x No. 12	1.00

GALVANIZED AWNING BLOCKS

Malleable Iron, Swivel Eyes

SINGLE SHEAVES

No.	Length of Shell inches	Diameter of Rope inches	Per Dozen
0	1	⅛	$0.60
1	1½	¼	.65
3	1¾	5/16	.90
5	2¼	⅜	1.40
7	2½	½	2.00

DOUBLE SHEAVES

No.	Length of Shell inches	Diameter of Rope inches	Per Dozen
00	1	⅛	$0.75
2	1½	¼	1.10
4	1¾	5/16	1.60
6	2¼	⅜	2.25
8	2½	½	2.80

PRESSED STEEL AWNING BLOCKS

Swivel Eye

SINGLE SHEAVES

No.	Sheave Diameter inches	Diameter of Rope inches	Per Dozen
0	½	⅛	$0.40
1	¾	¼	.45
3	1	5/16	.55

HEAD ROD HOLDERS

Per Dozen $0.80

STAR AWNING STUB

A Combination of Jaw Hinge, Lag Screw and Expansion Shield

Jaw End, ⅝ inch ..... per dozen $1.22
" " ¾ " ..... " 1.38

LAG SCREWS

Diameter inches	Length, Inches			
	2½	3	3½	4
⅝	$5.50	$6.00	$6.50	$7.00 per 100
¾	7.90	8.60	9.30	10.00 "

STAR SHIELD ONLY

Short or Long

⅝ inch ..... each $0.25 } Short Long
¾ " ..... " .36 } Length ..... 2 or 3½ in.

Cut off head of lag screws, thread end to fit jaw end, and insert in shield.

Drill ⅞ inch for ⅝ inch shield ..... each $1.35
" 1 " " ¾ " " ..... " 1.50

AWNING CHAINS

Plain ..... per foot $0.10
Galvanized ..... " .12

BULL'S EYES OR LIZARDS

LIGNUM-VITAE—Unstrapped

Outside Diam. ins.	1	1¼	1½	1¾	2	2¼	2½	2¾	3	3½	4
Diam. of Hole. "	⅜	½	⅝	¾	⅞	⅞	1	1⅛	1¼	1⅜	1½
Width of Score "	¼	5/16	⅜	½	½	9/16	⅝	⅝	⅞	1	1⅛
Price.....per doz.	$0.60	$0.60	$0.70	$0.70	$0.80	$0.90	$1.00	$1.20	$1.50	$2.00	$2.80

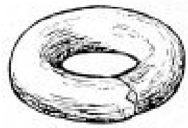
Wire Strapped

STRAPPED LIZARDS

1 inch Wire Strapped, per doz. $0.50
1½ " " " " .60
1½ " Iron " " .75

Patent Iron Strapped

GLASS RINGS



Small.....per doz. $0.40
Medium.. " .50
Large.... " .60
Small. per hundred 3.00
Medium " 3.40
Large " 3.80

HARNESS SNAPS

Oval Eye

No.	Diameter Eye Inside, inches	Tinned per gross
1	½	$1.80
2	¾	2.40
3	1	2.40

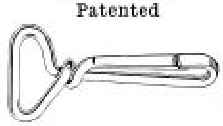
HOOKS AND EYES

No. 13 Wire
Length Over All, 2 inches

Brass..............per gross $2.40
Galvanized........ " 1.40

"F. G. L." WIRE SNAP HOOKS

Patented



⅝ inch Eye.......per gross $1.50

SAILMAKERS' THIMBLES

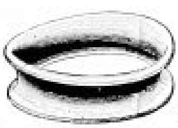
GALVANIZED MALLEABLE IRON

Outside Diam. ins.	⅝	¾	⅞	1	1⅛	1¼	1½	1¾	2	2¼	2½
Light.....per doz.	$0.25	$0.25	$0.30	$0.35	$0.38	$0.40	$0.45	$0.55	$0.60	$0.70	$0.80
Heavy.... "	......	......	......	......	......	......	......	......	.70	.85	1.25
Outside Diam. ins.	2¾	3	3¼	3½	3¾	4	4¼	4½	4¾	5	......
Light.....per doz.	$0.95	$1.10	$1.35	$1.70	......	......	......	......	......	......	......
Heavy.... "	1.60	1.70	1.90	2.15	$2.80	$3.25	$3.60	$4.30	$5.40	$6.30	......

EGG SHAPED THIMBLES

GALVANIZED MALLEABLE IRON

Measure Extreme Length of Thimble on the Outside



Size..in.	1¼	1⅜	1½	1⅝	1¾	2	2¼	2½	2¾	3	3¼	3½
Per doz.	$0.45	$0.50	$0.50	$0.55	$0.60	$0.70	$0.80	$0.90	$1.25	$1.75	$2.00	$2.75

SAILMAKERS' BRASS THIMBLES

SPUN—Measure Extreme Diameter Outside, from Edge to Edge

Size ....inches	⅝	¾	⅞	1	1⅛	1¼
Per doz....................	$0.60	$0.65	$0.68	$0.70	$0.75	$0.80
Size ....inches	1⅜	1½	1¾	2	2¼	2½
Per doz....................	$0.95	$1.00	$1.25	$1.50	$2.25	$2.75

OPEN CLEW THIMBLES

GALVANIZED STEEL

Measure Across the Score (i. e.), from Edge to Edge Outside

Sizes, ⅝, ¾, ⅞ inch..........................per pound $0.18
Sizes, 1, 1⅛, 1¼ " .... " .16
Sizes, 1⅜, 1½, 1⅝, 1¾, 2, 2¼ inch.......... " .14

AWNING HARDWARE

EYE ENDS

Tapped with Pipe Thread. Large Eyes

Fits Size Iron, Diam. inches	3/8	1/2	1/2	5/8	3/4	1	1 1/4
Fits Size Pipe, " "	1/8	1/4	1/4	3/8	1/2	3/4	1
Galvanized, No.	0	1	1 1/2	2	3	4	5
Per doz.	$0.28	.30	.30	.54	.88	1.34	1.96
Black No.	00	01	01 1/2	02	03	04	05
Per doz.	$0.24	.26	.26	.44	.72	1.08	1.58

Nos. 0, 01/2 and 1 fit { No. 11 Cotter Slides, No. 11 Cotter Hinges, 3/8 Nut Slides of our make.

No. 1 1/2 fits 3/8 Nut Slides of other parties' make.

Nos. 2, 3, 4 and 5 fit { No. 21 Cotter Hinges, Bracket Hinges, Nos. 33 to 35 Jaw Slides, Bracket Jaws, Double Arm Ends, Jaw Ends, Nos. 43 and 44 Square Jaw Slides.

EYE ENDS

Tapped with Pipe Thread

Small Eyes

Fits Size Iron, Diam. inches	7/16	1/2	5/8	3/4
Fits Size Pipe, " "	...	1/4	3/8	1/2
Galvanized, No.	10	11	12	13
Per doz.		$0.28	.54	.68
Black, No.	010	011	012	013
Per doz.		$0.24	.44	.56

Nos. 10, 11, 12, and 13 fit { Nos. 30, 31 and 32 Jaw Slides, Nos. 1 and 3 Jaw Hinges, Old Style Jaw Plate Hinges

FORK ENDS

Tapped with Pipe Thread

Fits Size Iron, Diam. inches	1/2	5/8	5/8	5/8	3/4	3/4
Fits Size Pipe, " "	1/4	3/8	3/8	3/8	1/2	1/2
Distance between Horns	5/8	5/8	3/4	1	3/4	1
Brass, No.	1	2	3	4	5	6
Per doz.	$1.10	1.38	1.64	2.96	2.08	2.44
Black, No.		02	03	04	05	06
Per doz.		$0.78	.86	1.04	1.18	1.36

JAW ENDS

With 3/8 dia. Square Head Bolt or Cotter Rivet

Fits Size Iron, Diam. in	5/8	3/4
Fits Size Pipe, " "	3/8	1/2
Galvanized, No.	2	3
Per doz.	$1.22	1.38
Black, No.	02	03
Per doz.	$1.10	1.26

JAW ENDS

With 1/4 dia. Stove Bolt

Fits Size Iron, Diam. in.	5/8	3/4
Fits Size Pipe, " "	3/8	1/2
Galvanized, No.	12	13
Per doz.	$0.86	1.24
Black, No.	012	013
Per doz.	$0.74	1.14

Takes Nos. 1, 1 1/2, 2, 3, 4, and 5 Eye Ends.

AWNING HARDWARE

BRACKET JAWS

Fits Size Iron in Diameter	½	⅝
Pipe Iron in Diameter	¼	¾
Galvanized, No.	1	2
Per dozen	$1.30	$1.44
Black, No.	01	02
Per dozen	$1.18	$1.30

Bracket jaws with short bolts sent unless otherwise ordered.

Method of Use

Any length of bracket can be made with these fixtures, with plates on page 611.

Front Hinge

As a Single Hinge

As a Double Hinge

Side Hinge

DOUBLE ARM ENDS

With Nuts

With Cotter Pins

Tapped to screw on ⅝ iron or ⅜ pipe.
The arms take Nos. 2, 3 and 4 eye ends.

With Nuts, Galvanized, No.	2	With Cotter Pins, Galvanized, No.	12
Per dozen	$2.08	Per dozen	$1.96
With Nuts, Black, No.	02	With Cotter Pins, Black, No.	012
Per dozen	$1.96	Per dozen	$1.64

EYE STUBS

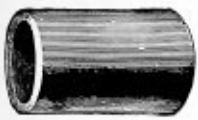
Eye Takes a ½ inch Diameter Bolt

Length ..... inches	1	2	3	4
Galvanized, No.	21	22	23	24
Per dozen	$0.64	$0.76	$1.00	$1.26
Black, No.	021	022	023	024
Per dozen	$0.52	$0.64	$0.76	$1.14

Screws into Nos. 1, 2, 3, 6 and 8 plates.

AWNING HARDWARE

COUPLINGS



Fits Size Iron in. Dia.	½	⅝	¾	1
Fits Size Pipe in. Dia.	¼	⅜	½	¾
Galv., No.	1	2	3	4
Per Doz.	$0.34	.60	.76	1.12
Black, No.	01	02	03	04
Per Doz.	$0.30	.50	.60	.86

ELBOWS

Fits Size Iron in. Dia.	½	⅝	¾	1
Fits Size Pipe in. Dia.	¼	⅜	½	¾
Galv., No.	1	2	3	4
Per Doz.	$0.78	1.02	1.18	1.44
Black, No.	01	02	03	04
Per Doz.	$0.58	.76	.92	1.18

SLIP TEES

To Screw on to Dia. Iron at A.	⅝	⅝	¾	¾	1	1
To Slip over Dia. of Iron at B.	⅝	¾	¾	1	1	1¼
Galv'd, No.	1	2	3	4	5	6
Per Doz.	$0.84	.96	1.12	1.30	1.68	1.90
Black, No.	01	02	03	04	05	06
Per Doz.	$0.70	.84	1.00	1.12	1.44	1.68

NUT ENDS

For extension rods. Regular with shank 1⅝ inches long.

Regular

Fits Size Iron in. Dia.	½	⅝	¾
Fits Size Pipe in. Dia.	¼	⅜	½
Galv., No.	1	2	5
Per Doz.	$0.38	.74	.94
Black, No.	01	02	03
Per Doz.	$0.32	.60	.76

NUT ENDS

For use with wooden front rod. Special with shank 2¾ inches long. All Nut Ends Tapped Pipe Thread.

Special

Fits Size Iron in. Dia.	⅝	¾
Fits Size Pipe in. Dia.	⅜	½
Galv., No.	12	13
Per Doz.	$1.00	1.36
Black, No.	012	013
Per Doz.	$0.84	$1.00

BOLT ENDS

For extension rods, malleable iron sockets. Wrought iron bolts. Regular with 7/16x1 in. bolts.

Regular

Threaded to Screw on to Round Iron in.	½	⅝	¾	1
Threaded to Screw on to Pipe in.	¼	⅜	½	¾
Galv., No.	1	2	3	4
Per Doz.	$0.80	.94	1.10	1.70
Black, No.	01	02	03	04
Per Doz.	$0.68	.78	.96	1.56

BOLT ENDS

For use with Wooden Front Rod Special with any length Bolt wanted 2¾-inch Bolt sent, unless otherwise ordered. All Bolt Ends Tapped Pipe Thread.

Special

Threaded to Screw on to Round Iron in.	⅝	¾	1
Threaded to Screw on to Pipe in.	⅜	½	¾
Galv., No.	12	13	14
Per Doz.	$1.20	1.38	1.96
Black, No.	012	013	014
Per doz.	$1.04	1.20	1.82

AWNING HARDWARE

JAW HINGES
Galvanized

Take Nos. 11, 12, and 13 Eye Ends.

No.		1	2	3
Flat Base	per doz.	$0.40	$0.48	....
Camel Back	"	.44	.50	$0.74

PLATE AWNING HINGES
With Bolts
Galvanized

Size inches	2	3	4	5	6
Per pair	$0.24	.30	.38	.44	.50
Size inches	7	8	9	10	12
Per pair	$0.54	.60	.66	.76	.86

Take Nos. 10, 11, 12, and 13 Eye Ends

NO. 11. SIDE COTTER HINGES
Galvanized
Use a 1x10 Wood Screw

No. 0 and No. 1 Eye Ends fit this Hinge
Per dozen $0.32

COTTER HINGES
Front
Galvanized Malleable Iron

Number	Length inches	Use Wood Screw	Per Doz.
1	2¼	1x8	$0.38

COTTER HINGES
Front
Galvanized Malleable Iron

Number	Length inches	Use Wood Screw	Per Doz.
2	3½	1x8	$0.94

Nos. 0, 0½ and 1 Eye Ends fit these Hinges

BRACKET HINGES
With Jaws

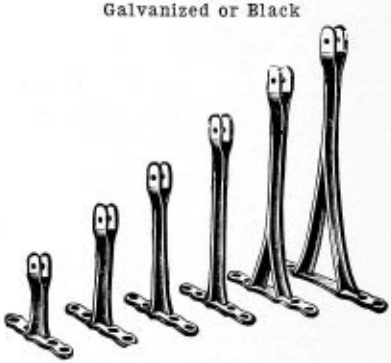
These Bolts and Rivets also fit all the Bracket Hinges illustrated below.

These Hinges are concave on the bottom and fit a flat or round surface.

Nos. 1, 2, 3, 4 and 5 Eye Ends fit these Hinges.

Length of Arm, inches	1	2
Length of Plate "	4	5
Galv. No.	21	22
Per pair	$0.20	$0.26
Black No.	021	022
Per pair	$0.18	$0.24

BRACKET HINGES
With Jaws
Galvanized or Black



Length over all, inches	3	4	6	8	10	12
Length of Plate, inches	5	5	5	5	6	8
Galv. No.	23	24	25	26	27	28
Per pair	$0.32	.36	.50	.60	.78	.94
Black No.	023	024	025	026	027	028
Per pair	$0.28	.34	.44	.54	.72	.88

SPIKE AWNING HINGES
Galvanized Malleable Iron

Inches	2	3	4	6	8	10	12
Per pair	$0.20	.24	.30	.36	.44	.54	.66

AWNING HARDWARE

PLATES

All Plates are concaved on the bottom to fit a flat or round surface. All tapped with Pipe Thread. Use No. 12 Wood Screw.

No. 0 and 00

1 and 01

2 and 02

3 and 03
13 and 013

4 and 04
14 and 014

5 and 05
15 and 015

6 and 06
16 and 016

7, 8, 9.
07, 08, 09

Length, inches	2	4 1/8	2 1/4	3 1/2	3 1/4	3	3	3	2 5/8	4	3 1/2	3	4	4 1/4
Screws on to iron	1/2	5/8	5/8	5/8	1/2	5/8	1/2	5/8	1/2	5/8	1/2	5/8	5/8	3/4
Screws on to pipe	1/4	3/8	3/8	3/4	1/4	3/8	1/4	3/8	1/4	3/8	1/4	3/8	3/8	1/2
Galvanized, No.	0	1	2	3	13	4	14	5	15	6	16	7	8	9
Per dozen	$0.38	.70	.50	.70	.58	.58	.58	.56	.52	.66	.60	.80	.90	.90
Black, No.	00	01	02	03	013	04	014	05	015	06	016	07	08	09
Per dozen	$0.26	.58	.42	.58	.48	.48	.48	.46	.44	.54	.50	.68	.76	.76

ROUND SOCKETS

Galvanized. For Ends of Side Rods.

Threaded
No. 0, 1, 2, 3

Threaded
20, 21

Not Threaded
10, 11, 12, 13

Fit iron, diameter	3/8	1/2	5/8	3/4	3/8	1/2	3/8	1/2	5/8	3/4
" pipe "	...	1/2	3/8	1/2	...	1/4	...	1/4	3/8	1/2
No.	0	1	2	3	20	21	10	11	12	13
Per dozen	$0.52	.72	1.12	1.62	.52	.72	.36	.62	.94	1.44

SQUARE SOCKETS

New style. These Sockets allow the iron to stand with the flat side toward the wall.

Use Nos. 43 and 44 Square Jaw Slides with these Sockets.

To fit Diam. Sq. iron	1/2	5/8
Galvanized No.	43	44
Per dozen	$0.76	1.18
Black, No.	043	044
Per dozen	.60	.95

Y STUB

5/8 Iron by 1/2 Iron.

Black	per dozen	$1.00
Galvanized	"	1.20

CLAMP HINGES

The Jaws in these Clamp Hinges take our Nos. 2, 3 and 4 Eye Ends.

To clamp on size of iron	5/8	....	....	....
Pipe	....	1/2	3/4	1
Galvanized, No.	2	3	4	5
Per dozen	$2.20	2.60	3.10	4.40
Black, No.	02	03	04	05
Per dozen	$2.10	2.40	2.90	4.00

AWNING HARDWARE

JAW SLIDES
Galvanized
With Machine Screw

Nos. 10, 11, 12 and 13 Eye Ends fit these Slides.

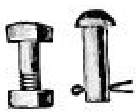
To fit diam. round iron.	Inches..		
....	3/8	1/2	5/8
Number..........	35	31	32
Per doz..........	$0.48	.66	1.20

JAW SLIDES
With 5/8 Bolt or Cotter Rivet

These Slides have wide jaws to fit Nos. 2, 3, and 4 Eye Ends.

To fit round iron....	5/8	3/4	1
To fit pipe............	..	1/2	3/4
Galv., No.............	52	53	54
Per dozen.....	$1.70	2.34	3.64

SQUARE JAW SLIDES
New Style



Machine Bolt Cotter Rivet

Nos. 2, 3 and 4 Eye Ends fit these slides.

Use Nos. 43 and 44 Square Sockets with these Slides.
These Slides will slide freely on the Rods.

To fit square iron of full size..........	1/2	3/4
Galv., No............................	43	44
Per dozen............................	$1.28	1.70

SIDE NUT SLIDES
Galvanized

This Slide takes No. 0 and No. 1 Eye Ends.

3/8 inch........per dozen $0.50
1/2 " .... " " .64

SIDE COTTER SLIDES
Galvanized

This Slide takes No. 0 and No. 1 Eye Ends.

3/8 inch...............per dozen $0.46

JAW SLIDES
Galvanized
With Thumb Screw (to prevent rattling)

Fit Iron size......	3/8	1/2
Per dozen........	$1.20	1.50

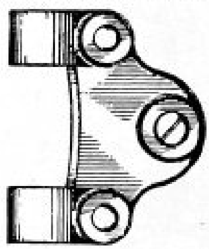
ROLLER BEARING SLIDES
With Machine Bolt

For Iron....Inches	5/8	3/4
Black.....per doz.	$3.60	$4.80
Galv...... " "	4.80	6.00

THE CAMPBELL AUTOMATIC ROLLER SLIDE HINGE

The slide is made of malleable iron in two parts. The yoke can be removed and slipped over slide rod by removing one bolt.

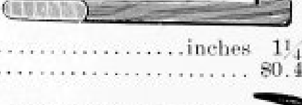
Fits pipe...........................	1/2	3/4
Per dozen...........................	$8.40	9.60



PACIFIC ROLLER SLIDE

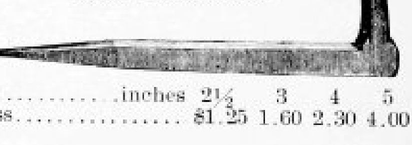
Fits iron..........	5/8	3/4
Per dozen.........	$3.00	4.00

AWNING HOOKS
For Wood
Black Wrought Iron, Sharp Points



Length......................inches	1 1/4	1 1/2	2
Per gross..........................	$0.40	.45	.60

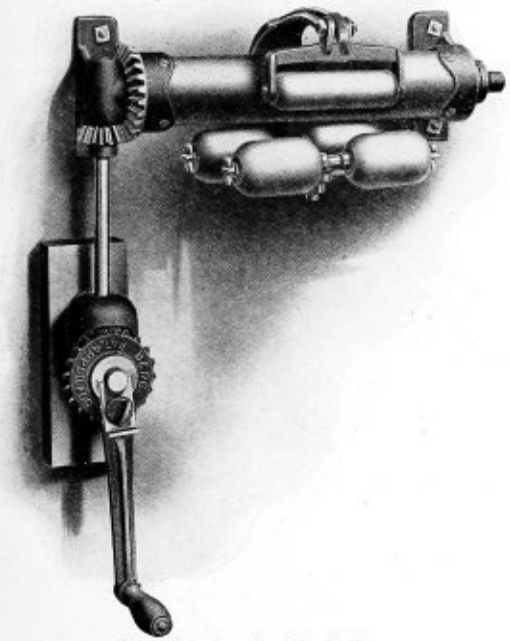
SQUARE BRICK HOOKS
Black Wrought Iron



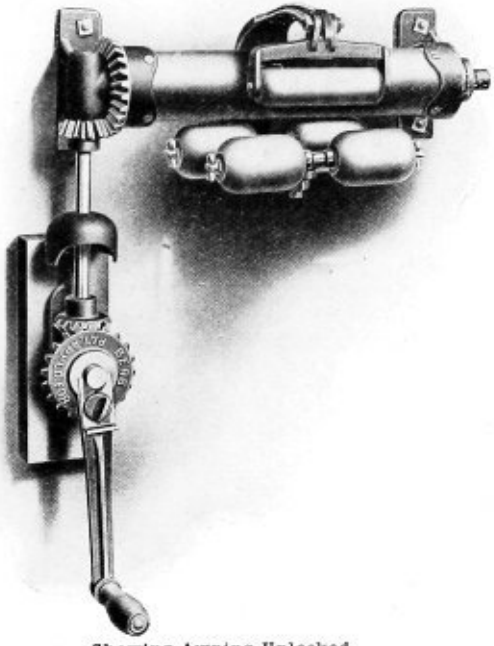
Length...........inches	2 1/2	3	4	5	6
Per gross................	$1.25	1.60	2.30	4.00	4.60

BERG'S ROLLER AWNING FIXTURE

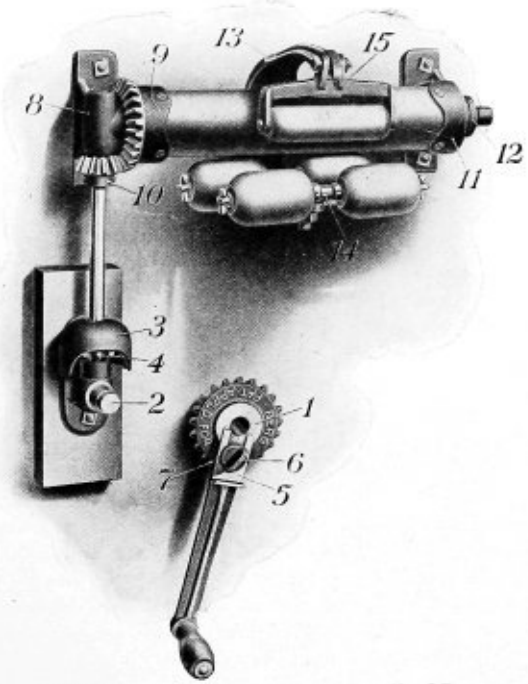
SIMPLICITY AND STRENGTH



Showing Awning Locked



Showing Awning Unlocked



Showing Awning Locked with Handle Off

PARTS

Crank and Gear	No.	1
Lower Post	"	2
Cap Lock	"	3
Lower Rod Gear	"	4
Crank Key	"	5
Thumb Screw	"	6
Washer	"	7
Gear Post Upper	"	8
Gear Cups	"	9-11
Upper Rod Gear	"	10
Bracket	"	12
Support	"	13-14-15

This Fixture is the simplest and strongest on the market.

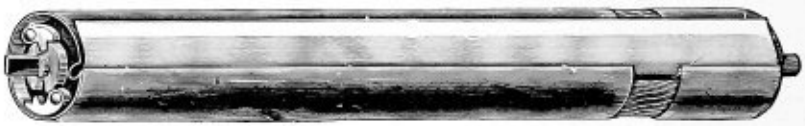
It has been in use for a number of years on Awnings up to 80 feet in length.

Illustrations show it for Wood Rollers. We furnish it for pipe as well with or without the Center Support.

Complete as shown, without Wood Roller ..... per set $4.00
" for Pipe with Pipe Centre Support ..... " 3.75

AWNING ROLLERS

EXTRA HEAVY



Special awning rollers are made with extremely strong springs, and extra heavy parts to stand the work in the most perfect manner. All these will have strips of linen run into the groove, to which the awning is to be sewed. When ordering rollers for awning use, mention the fact and state whether the awning will run straight up and down, like a window shade, or will be used with iron outriggers. All castings are galvanized.

1½ in. — 4 feet and under in length ..... each, $0.80

1¾ in. — 4 feet and under in length ..... " 1.20

Over 4 feet, to and including 5 feet ..... " 1.30

Over 5 feet, to and including 6 feet ..... " 1.40

The 1½ and 1¾ inch to be used only on usual light-weight dwelling house awnings.

2¼ in. — 6 feet and under in length ..... $2.40; over 6 feet ..... per foot, .40

Must not be used over 10 feet long, and on heavy store-front awnings larger diameters should always be used.

3 in — 7 feet and under in length ..... $4.90; over 7 feet ..... per foot, $0.70

This roller should not be used over 13 feet on awnings.

4 in — 7 feet and under in length ..... $10.50; over 7 feet ..... per foot, 1.50

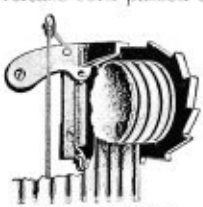
This roller should not be used over 18 feet on awnings.

5 in. — 10 feet and under in length ..... $20.00; over 10 feet ..... per foot, 2.00

This roller should not be used over 25 feet long.

PORCH CURTAINS

Are mounted and work straight up and down like window shades, with square hole bracket to the left and extension end to the right. This necessitates a Ratchet Catch as illustrated. This shows the ratchet on top the release cord passed through a screw-eye placed above. With this device the awning will roll up when the pawl on the roller is started by a downward pull, same as an ordinary window shade; but to unroll the awning it is necessary to free the ratchet from the teeth of wheel by pulling on the release cord. With this device on a veranda awning, and the actuating cord at bottom of awning fastened, no wind will cause the cloth to belly out. It will be held firmly, and the cloth will be straight up and down. All parts of these two forms of Ratchet Catch are heavily galvanized, and have been especially designed to stand the heaviest possible strain. Always fasten the extension piece in roller after adjustment in brackets, so that it cannot be forced in or out.



Ratchet Catch

Each $1.00

SCREW EYES

No. 6 No. 8 No. 10

Illustrations are full Size

BRIGHT WIRE SCREW EYES
Prices per Gross

No.	Price	No.	Price	No.	Price	No.	Price
000	$22.00	10	$2.00	111	$1.60	210	$1.70
00	16.00	11	1.75	112	1.40	211	1.40
0	13.00	12	1.50	113	1.30	212	1.30
1	11.00	13	1.40	114	1.20	213	1.20
2	8.50	14	1.30	114½	1.20	214	1.10
3	7.00	104	5.00	115	1.20	214½	1.10
4	5.50	105	4.00	204	4.50	214¾	1.10
5	4.50	106	3.25	205	3.50	215	1.10
6	3.50	107	2.75	206	3.00	215½	1.10
7	3.00	108	2.30	207	2.50	216½	1.10
8	2.50	109	2.00	208	2.20	.....	....
9	2.25	110	1.80	209	1.90	.....	.....

BRASS WIRE SCREW EYES

No.	Price	No.	Price	No.	Price	No.	Price
1000	$70.00	1012	$4.50	1113	$3.25	1210	$6.00
1001	57.50	1013	3.50	1114	3.00	1211	5.25
1002	48.00	1014	3.00	1114½	3.00	1212	3.75
1003	37.00	1104	26.00	1115	3.00	1213	3.00
1004	29.00	1105	21.00	1115½	3.00	1214	3.00
1005	23.00	1106	17.00	1116½	3.00	1214½	3.00
1006	19.00	1107	13.50	1204	24.00	1214¾	3.00
1007	15.50	1108	10.00	1205	19.50	1215	3.00
1008	12.00	1109	7.50	1206	15.00	1215½	3.00
1009	10.00	1110	6.50	1207	12.00	1216½	3.00
1010	8.00	1111	5.50	1208	9.00	.....	....
1011	6.50	1112	4.00	1209	7.00	.....	.....

SCREW HOOKS

BRASS WIRE SCREW HOOKS

No.	Price	No.	Price	No.	Price	No.	Price
1000	$100.00	1004	$42.00	1007	$20.00	1011	$7.50
1001	82.50	1005	35.00	1008	15.00	1012	5.50
1002	62.50	1006	29.00	1009	12.00	1013	4.25
1003	46.00	1006½	26.00	1010	9.50	1014	3.25

BRIGHT WIRE SCREW HOOKS

No.	Price	No.	Price	No.	Price	No.	Price
0	$18.00	4	$8.00	7	$4.00	11	$2.20
1	15.50	5	6.50	8	3.50	12	2.00
2	13.00	6	5.50	9	2.80	13	1.90
3	11.00	6½	5.00	10	2.40	14	1.80

STAPLES

Plain Staples		Galv. Staples, ¼ Wire		Galv. Staples, 5/16 Wire	
Inches	Per Gross	Inches	Per Gross	Inches	Per Gross
1	$1.20	...	.....	¾	$0.45
1¼	1.20	2½	$2.40	1	.50
1½	1.25	3	2.50	1¼	.55
1¾	1.50	3½	2.70	1½	.65
2	1.70	4	3.15	1¾	.80
2¼	2.00	4½	3.75	2	.90
2½	2.35	5	4.50	2¼	1.00
2¾	2.65	...	.....	2½	1.30
3	3.20	...	.....	3	1.40
3½	3.70	...	.....	...	.....
4	5.25	...	.....	...	.....

Plain Staples are packed: 1½ to 3-inch, assorted, per gross $2.00; 1½ to 3-inch, one gross in a box; 3½ and 4-inch, one-half gross in a box.

MARVEL ROD CUTTER

Cutting Dies have round opening of correct size to cut off rods and wire within the capacity of the machine, which insures good work with ends round and true.

The Marvel Rod Cutter is so arranged as to bring the lever at a convenient height from the bench, and the gearing is so placed as to remove all danger of crushing the operator's hand. The round steel lever can be instantly removed, when desired.

The center of leverage is down low, which lessens the pull on the bench. The neat gauge is very handy when cutting a number of pieces of the same length.

No. 5. Cuts rods 3/8, 5/16, 1/4, 3/16, 1/8 in. and intermediate sizes. Weight 12 pounds. Complete with lever, gauge and gauge rod.....each, $6.00

No. 6. Cuts rods 5/8, 9/16, 1/2, 7/16, 3/8 in. and intermediate sizes. Weight 35 pounds. Complete with lever, gauge and gauge rod.....each, 10.00

No. 7. Cuts rods 7/8, 3/4, 5/8, 1/4, 3/8 in. and intermediate sizes. Weight 95 pounds. Complete with lever, gauge and gauge rod.....each, 22.00

IRON CUTTER

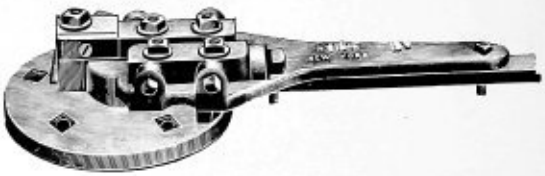
For cutting 3/8", 1/2" and 5/8" round iron.

This Machine will cut these sizes of round iron easily and quickly.

It does not flatten the iron, but makes a clean cut, leaving the end round and without any bur.

Each.....$30.00

FRAME BENDERS



Only One Adjustment

This Machine is made to bend 3/8, 1/2 and 5/8 round iron to right angles.

Every corner will be exactly alike.

Every frame will be correct in size.

The Bender is fitted with a movable gauge. The handle contains two holes to receive this gauge, one for making frames 2 ft. 6 in. out, and one for making frames 3 ft. 0 in. out. We also furnish a second gauge adjustable to any distance out.

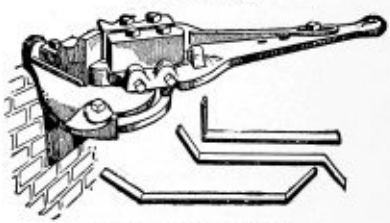
All widths of frames can be made without further adjustment, simply by cutting the iron the proper lengths. Each.....$30.00

Table of Lengths

We furnish a printed table of lengths to cut 1/2 round iron to make all widths of frames, both 2 ft. 6 in, out and 3 ft. 0 in. out.

ANGLE BENDERS

(Hand Power)



Made in Two Sizes

A very useful and money-saving tool for all factories. Indispensable for awning makers.

No. 1 will bend flat stock up to 2 in. wide by 3/8 in. thick, and round or square stock up to 3/4 in. hot. Gro. wt. 62 lbs.; net wt. 52 lbs.

Price, with regular dies.....$20.00

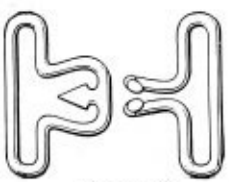
Case hardened steel front die, extra..... 4.50

No. 2 bends flat stock 4 in. wide by 1/2 in. thick and round or square stock up to 1 in. hot. Gro. wt. 140 lbs.; net wt. 125 lbs.

Price, with regular dies.....$35.00

Case hardened steel front die, extra..... 5.00

THE AUTO-LOCK



Unlocked

Snap, Buckle, Clasp, or Hook and Eye. Is the Quickest to Fasten or Unfasten. Is Automatic and Perfect in Action

Nickel

Sizes, inches.....	5/8	3/4	7/8	1 1/8	1 1/2	1 3/4	2	2 1/2	
Standard.....$1.00	1.10	....	1.60	1.80	2.30	2.40	2.70	Gross
Heavy.....	1.30	1.50	1.80	2.20	....	2.80	3.40	"

Slides

5/8	3/4	7/8	1 1/8	1 1/2	1 3/4	2	2 1/2	
$0.40	50	.50	.60	.90	1.00	1.20	1.50	Gross

TENT POLE BANDS

Galvanized Wrought Iron

Inches Diam.	Per Dozen
$1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$	$1.25
2, $2\frac{1}{4}$, $2\frac{1}{2}$	1.50
3	1.75

RIDGE POLE BANDS

Galvanized Wrought Iron

Inches Diam.	Per Dozen
Sizes $1\frac{1}{2}$, $1\frac{3}{4}$	$1.75
" 2, $2\frac{1}{4}$, $2\frac{1}{2}$	2.00

FERRULES

Galvanized or Tinned Malleable Iron

Inches	Per Dozen
Size $\frac{1}{4}$	$0.20
" $\frac{3}{8}$	.30
" $\frac{1}{2}$	.45
" $\frac{5}{8}$	.60
" $\frac{3}{4}$	.80
" $\frac{7}{8}$	1.00
" 1	1.25
" $1\frac{1}{8}$	1.75
" $1\frac{1}{4}$	2.25
" $1\frac{3}{8}$	2.50
" $1\frac{1}{2}$	2.75
" $1\frac{3}{4}$	3.75
" 2	5.00
" $2\frac{1}{4}$	7.00

GOVERNMENT TENT SLIDES

Size	Length	Diameter of Hole inch	Galv. Mall. Iron per Dozen	Brass per Dozen
No. 1	5	$\frac{1}{2}$	$0.75	$1.50
" 2	4	$\frac{7}{16}$	.50	1.00
" 3	3	$\frac{3}{8}$	.30	.60

WOOD TENT PINS

12 inch	per M,	$	.....
14 "	"		.....
16 "	"		.....
18 "	"		.....
20 "	"		.....

WOOD ROUND TENT STAKES

With Iron Ferrules

24 inch	per 100,	$	.....
30 "	"		.....
36 "	"		.....
42 "	"		.....
46 "	"		.....

MALLEABLE IRON TENT PINS

$8\frac{1}{2}$ inches long	per doz.,	$0.60	
13 " "	"	.80	

WOOD TENT SLIDES OR KEYS

$\frac{5}{16}$ inch Hole	per M,	$	.....
$\frac{3}{8}$ "	"		.....
$\frac{1}{2}$ "	"		.....

WOOD TENT BUTTONS

Small, for $\frac{1}{4}$ in. Rope	per M,	$	.....
Large, " $\frac{5}{16}$ "	"		.....

TENT POLES

OCTAGON UPRIGHTS

6 to 9 feet	per foot,	$	.....
10 " 12 "	"		.....
14 " 16 "	"		.....

RIDGE POLES

7, 9 and 12 feet	per foot,	$	.....
14 " 16 "	"		.....
18 " 20 "	"		.....
24, 30 " 35 " Spliced	"		.....

RING CLEWS

Galvanized Wrought Iron

When ordering Ring Clews, give diameter of Iron, size of Ring in the clear, and width of Thimble, outside measure, across the score.

3/8x2, 2 1/4, 2 1/2, 2 3/4	each $0.20
7/16x2 1/4, 2 1/2, 2 3/4, 3	" .22
1/2x2 1/2, 2 3/4, 3, 3 1/4, 3 1/2	" .25
9/16x2 1/2, 2 3/4, 3, 3 1/4, 3 1/2	" .30
5/8x2 1/2, 2 3/4, 3, 3 1/4, 3 1/2, 3 3/4	each .35
11/16x2 3/4, 3, 3 1/4, 3 1/2, 3 3/4, 4	" .40
Sizes, 3/4, 13/16, 7/8, 15/16, 1, 1 1/16, 1 1/8, 1 1/4	per lb. .14

SPECTACLE CLEWS

Galvanized Wrought Iron. Solid Bar

Size, inches	3/8	7/16	1/2	9/16	5/8	11/16	3/4 and larger
Each	$0.40	.40	.50	.50	.55	.55	per lb. .16

SHIP CLEWS

Galvanized Wrought Iron with Improved Patent Thimbles

With Bow

For Courses

Size, inches	3/8	7/16	1/2	9/16	5/8	11/16	3/4 and larger
Price, per pr.	$0.85	.85	1.00	1.00	1.25	1.25	per lb. .16

HEART CLEWS

Galvanized Wrought Iron

Size, inches	3/8	7/16	1/2	9/16	5/8	11/16	3/4 and larger
Each	$0.40	.40	.50	.50	.55	.55	per lb. .16

SHIP CLEWS

Galvanized Wrought Iron

Solid Bar. Boston Pattern

With Bar

Size, inches...	3/8	7/16	1/2	9/16	5/8	11/16	3/4 to 1 1/4
Solid Bar, Boston Pat., per pair.....						$1.25	1.40 per lb. .16
With Bar, per pair..	$0.85	.85	1.00	1.00	1.25	1.25	" .16

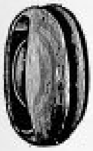
Link Earing

Heart Earing

Size, inches.	3/8	7/16	1/2	9/16	5/8	11/16	3/4 and larger
Link Earing			$1.00	1.00	1.25	1.25	per lb. .20
Heart "	$0.40	.40	.50	.50	.55	.55	" .16

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

JIB-SHEET BLOCKS



Size Inches	Ash Blocks — For Rope Straps Each	Lignum-Vitæ Blocks — For Rope Straps Each	Lignum-Vitæ Blocks — Iron Strapped Each
4	$0.50	$0.65	$1.75
5	.55	.70	2.00
6	.65	.80	2.25
7	.80	1.00	2.75
8	1.00	1.25	3.50
9	1.20	1.50	4.00
10	1.60	2.00	5.00

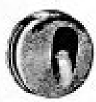
LIGNUM - VITAE DEAD EYES, HEARTS AND BULL'S EYES

In ordering state whether for Wire or Hemp Rope or Iron Straps.

FOR WIRE OR HEMP ROPE

Upper Dead Eye

Heart


Bull's Eye

Inch	Each
2½	$0.35
3	.42
3½	.49
4	.56
4½	.63
5	.70
5½	.77

FOR IRON STRAPS

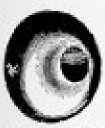
Lower Dead Eye

Heart

Bull's Eye

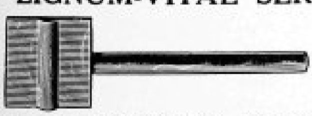
Inch	Each
6	$0.84
6½	.91
7	1.35
7½	1.60
8	1.85
8½	2.25
9	3.25

LIGNUM-VITAE PARREL TRUCKS



Sizes, inches	Per doz.
⅝, ¾, ⅞, 1, 1¼	$0.40
1½, 1¾, 2	.75
2¼, 2½	1.00
2¾	1.25
3	1.55

LIGNUM-VITAE SERVING BOARDS



No.		Per doz.
1	3½x3½	$5.75
2	4x4	7.00

LIGNUM-VITAE SERVING MALLETS

No.		Per doz.
1.	2x7	$4.50
2.	2½x7½	5.00
3.	3x8	6.25

SHIP SCRAPERS

Tempered Steel Blades, Galvanized Sockets

	Per doz.
No. 1. Blade ¼ inch thick	$7.50
" 2. " ⅛ " "	4.50
" 3. " 2½ inches square	5.00

CONCAVO-CONVEX BLADES

Tempered Steel, Galvanized Sockets

Per doz...$7.50

YACHT OR BOAT

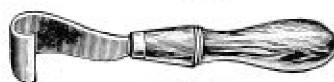
Oval

Triangular

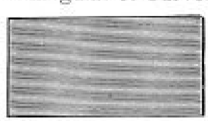
		Per doz.
Oval,	5 inches long; blade, 2¼x1 inch	$3.50
Triangular,	" " " " 2 x2 "	3.50

YACHT SPAR

Triangular


Curved

	Per doz.
Triangular or Curved	$6.00



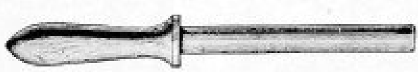
STEEL CABINET

	Per doz.
2½x5 inches	$1.00
4 x6 "	1.80

DECK PLUGS

	⅜	½	⅝	¾	⅞	1	1¼
White Pine..per 1000	$1.50	$1.50	$1.50	$2.00	$2.00	$2.00	$2.50
Oak..... "	2.00	2.00	2.00	2.50	2.50	2.50	3.00
Cherry.. "	2.00	2.00	2.00	2.50	2.50	2.50	3.00
Mahogany "	2.50	2.50	2.50	3.00	3.00	3.00	3.50

BELAYING PINS



No.	Wood — Length of Handle inches	Extreme Length inches	Diameter of Pin inches	Oak or Hickory per dozen	Locust per dozen
00	4½	11	¾	$0.70	$0.75
0	5	12	⅞	.80	.85
1	6½	15	1	.90	.95
2	7	16	1⅛	1.00	1.10
3	8	19	1¼	1.10	1.25

No.	Galvanized Iron and Brass — Length of Handle inches	Extreme Length inches	Diameter of Shank Inches	Galvanized Iron per dozen	Polished Brass per dozen
1	3	8	⅜	$1.50	$5.00
2	3½	9	7/16	2.00	5.50
3	3⅝	9½	½	2.50	6.00
4	3¾	10¼	⅝	3.25	9.00
5	4¼	11	¾	4.00	10.00

SHACKLES

SCREW ANCHOR SHACKLES

Wrought Iron

SCREW CHAIN SHACKLES

Wrought Iron

Size inches	Galvanized per doz.	Black per doz.	Length Inside inches	Width between Eyes inches	Diameter of Pin inches	Estimated Wt., lbs. each
3/16	$3.00	$2.75	7/8	3/8	3/16	. .
1/4	3.00	2.75	1 1/16	1/2	1/4	. .
5/16	3.00	2.75	1 3/8	5/8	5/16	. .
3/8	3.25	3.00	1 7/16	11/16	3/8	. .
7/16	3.75	3.50	1 3/4	3/4	7/16	. .
1/2	4.50	4.00	2	7/8	1/2	. .
9/16	5.00	4.50	2 1/4	7/8	5/8	. .
5/8	5.75	5.00	2 5/8	1 1/8	5/8	. .
3/4	6.75	5.50	3 3/16	1 1/4	3/4	. .
7/8	8.75	7.00	3 1/4	1 3/8	7/8	. .
1	13.00	10.00	3 5/8	1 3/4	1	. .
1 1/8	20.00	16.00	4 1/4	1 15/16	1 1/4	. .
1 1/4	25.00	20.00	4 3/8	2	1 3/8	. .
1 3/8	per lb.	per lb.	5 1/8	2 3/8	1 1/2	12
1 1/2			6	2 1/8	1 5/8	15
1 5/8	.20	.16	6 1/2	2 3/4	1 3/4	19
1 3/4			7	3	1 7/8	24
2	.22	.18	7 3/4	3 1/2	2 1/8	39

Size inches	Galvanized per doz.	Black per doz.	Length Inside inches	Width between Eyes inches	Diameter of Pin inches	Estimated Wt., lbs. each
3/16	$3.00	$2.75	3/4	5/16	1/4	. .
1/4	3.00	2.75	1 1/16	3/8	5/16	. .
5/16	3.00	2.75	1 1/8	1/2	3/8	. .
3/8	3.25	3.00	1 5/16	9/16	7/16	. .
7/16	3.75	3.50	1 9/16	5/8	1/2	. .
1/2	4.50	4.00	1 9/16	3/4	5/8	. .
9/16	5.00	4.50	1 13/16	7/8	5/8	. .
5/8	5.75	5.00	1 7/8	1 1/16	3/4	. .
3/4	6.75	5.50	2 1/16	1 1/4	7/8	. .
7/8	8.75	7.00	3 1/16	1 1/4	1	. .
1	13.00	10.00	3 7/16	1 1/2	1 1/8	. .
1 1/8	20.00	16.00	3 3/8	1 5/8	1 1/4	. .
1 1/4	25.00	20.00	3 11/16	1 5/8	1 3/8	. .
1 3/8	per lb.	per lb.	4 7/8	2 1/8	1 1/2	11
1 1/2			5 1/4	2 1/4	1 5/8	15
1 5/8	.20	.16	5 5/8	2 3/8	1 3/4	17
1 3/4			6	2 1/2	1 7/8	18
2	.22	.18	7	2 3/4	2 1/8	29

OVAL PIN ANCHOR SHACKLES

Wrought Iron

OVAL PIN CHAIN SHACKLES

Wrought Iron

Size inches	Galvanized per doz.	Black per doz.	Length Inside inches	Width between Eyes inches	Estimated Wt., lbs. each
1/4	$2.75	$2.50	1 1/16	7/16	. .
5/16	2.75	2.50	1 5/16	5/8	. .
3/8	3.00	2.75	1 1/2	11/16	. .
7/16	3.65	3.40	1 7/8	11/16	. .
1/2	4.25	3.75	2 3/8	15/16	. .
9/16	4.75	4.25	2 3/8	1 1/8	. .
5/8	5.50	4.75	2 1/2	1 1/8	. .
3/4	6.50	5.50	3 3/8	1 1/4	. .
7/8	8.70	7.25	3 5/8	1 3/8	. .
1	14.00	11.00	3 15/16	1 11/16	. .
1 1/8	20.00	16.00	4 1/8	1 7/8	. .
1 1/4	25.00	20.00	4 3/8	2	. .
1 3/8	per lb.	per lb.	4 13/16	2 5/16	14
1 1/2			6	2 1/2	16
1 5/8	.20	.16	6 1/2	2 3/4	19
1 3/4			7	3	24
2	.22	.18	7 3/4	3 1/2	39

Size inches	Galvanized per doz.	Black per doz.	Length Inside inches	Width between Eyes inches	Estimated Wt., lbs. each
1/4	$2.75	$2.50	15/16	3/8	. .
5/16	2.75	2.50	1 1/8	7/16	. .
3/8	3.00	2.75	1 1/4	1/2	. .
7/16	3.65	3.40	1 7/16	5/8	. .
1/2	4.25	3.75	1 3/4	3/4	. .
9/16	4.75	4.25	1 11/16	7/8	. .
5/8	5.50	4.75	1 7/8	1 1/16	. .
3/4	6.50	5.50	2 1/16	1 1/4	. .
7/8	8.70	7.25	2 9/16	1 3/8	. .
1	14.00	11.00	3 1/8	1 5/8	. .
1 1/8	20.00	16.00	3 1/2	1 5/8	. .
1 1/4	25.00	20.00	3 7/8	2 1/16	. .
1 3/8	per lb.	per lb.	4 7/8	2 1/8	11
1 1/2			5 1/4	2 1/4	15
1 5/8	.20	.16	5 5/8	2 3/8	17
1 3/4			6	2 1/2	18
2	.22	.18	7	2 3/4	29

Complete assortment of these goods in our Marine Catalog. If interested, send for it.
For strength of Shackles, see page 621. For Chain, see pages 61 and 62. For Anchors, see pages 633.

SHACKLES

WROUGHT IRON WITH ROUND PIN FOR BLOCKS AND DERRICK GUYS

Anchor

Chain

Size inches	Galvanized per doz.	Black per doz	Dimensions of Anchor: Length Inside inches	Width between Eyes inches	Diameter Pin inches	Est'd Wt. Each, lbs.	Dimensions of Chain: Length Inside inches	Width between Eyes inches	Diameter Pin inches	Est'd Wt. Each, lbs.
1/4	$2.75	$2.50	1 1/4	1/2	5/16	..	15/16	3/8	5/16	..
5/16	2.75	2.50	1 1/2	11/16	3/8	..	1	7/16	3/8	..
3/8	3.00	2.75	1 5/8	11/16	7/16	..	1 7/32	9/16	7/16	..
7/16	3.65	3.40	1 3/4	13/16	1/2	..	1 7/16	9/16	1 1/2	..
1/2	4.25	3.75	2	7/8	5/8	..	1 3/4	11/16	2 1/32	..
9/16	4.75	4.25	2 1/16	7/8	5/8	..	1 11/16	13/16	2 1/32	..
5/8	5.50	4.75	2 5/8	1 3/16	3/4	..	1 7/8	1 1/8	3/4	..
3/4	6.50	5.50	3 1/8	1 3/16	7/8	..	2 1/2	1 3/16	7/8	..
7/8	8.70	7.25	3 1/4	1 13/32	1	..	2 13/32	1 1/4	1	..
1	13.00	10.00	3 3/4	1 11/16	1 1/8	..	3 3/8	1 9/16	1 1/8	..
1 1/8	20.00	16.00	4 1/2	1 7/8	1 1/4	..	2 13/16	1 11/16	1 1/4	..
1 1/4	25.00	20.00	4 15/16	2	1 3/8	..	3 3/16	2	1 3/8	..
1 3/8			5 3/16	2 7/16	1 1/2	12	4 7/8	2 1/8	1 1/2	11
1 1/2	Lb.	Lb.	6	2 1/2	1 5/8	16	5 1/4	2 1/4	1 5/8	15
1 5/8	.20	.16	6 1/2	2 3/4	1 3/4	19	5 5/8	2 3/8	1 3/4	17
1 3/4			7	3	1 7/8	24	6	2 1/2	1 7/8	18
2	.22	.18	7 3/4	3 1/2	2 1/8	39	7	2 3/4	2 1/8	28

HEART SHACKLES — GALVANIZED WROUGHT IRON

Size.....inches,	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8
Per dozen.....	$6.00	6.25	6.50	7.50	8.50	9.50	11.50	14.00	18.00

STRENGTH OF SHACKLES

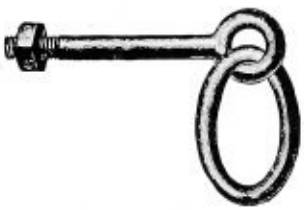
Part of these Figures are Actual Government Tests; the Balance is Estimated

Size, inches	Maximum Strength in lbs.	Size, inches	Maximum Strength in lbs.
1/4	4,530	1 1/8	74,550
5/16	6,075	1 1/4	92,040
3/8	8,221	1 3/8	116,300
7/16	10,078	1 1/2	132,532
1/2	14,722	1 5/8	155,542
5/8	23,010	1 3/4	172,400
3/4	33,135	1 7/8	207,090
7/8	45,097	2	235,620
1	58,905	2 1/8	265,995

For Chain, see pages 61 and 62.
For Anchors, see page 633.
Complete assortment of these Goods in our Marine Catalog. If interested, send for it.

NUT RING BOLTS

Galvanized Wrought Iron. Drop Forged



Size, inches	Regular Lengths: Length under the Eye inches	Regular Lengths: Inside diameter of Ring inches	Regular Lengths: Galvanized per doz. Regular	Extra Lengths to Order: Length under the Eye, inches	Extra Lengths to Order: Galvanized per doz.	Extra Lengths to Order: For each additional length in inches add to list
1/4	2	1 3/4	$2.00	4	$2.20	$0.20 per doz.
5/16	2 1/4	2	2.60	4 1/4	2.90	.25 "
3/8	2 1/2	2	3.00	4 1/2	3.30	.25 "
7/16	2 3/4	2 1/4	3.50	4 3/4	3.90	.27 "
1/2	3 1/4	2 1/2	3.80	5 1/4	4.20	.27 "
5/8	3 3/4	2 1/2	4.70	5 1/2	5.20	.30 "
3/4	4	2 3/4	6.00	6	6.60	.35 "
7/8	4 1/2	3	9.50	6 1/2	10.50	.50 "
1	5	3 1/4	14.00	8	15.50	.60 "
	6	3 3/4	20.00	9	22.00	.70 "

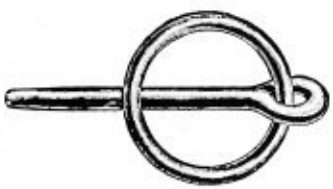
SCREW RING BOLTS

Wrought Iron. Drop Forged

Size, inches	Length under the Eye, inches	Inside diameter of Ring, inches	Galvanized per doz.
1/4	2	1 3/4	$1.60
5/16	2 1/4	2	2.40
3/8	2 1/2	2	2.80
7/16	2 3/4	2 1/4	3.20
1/2	3 1/4	2 1/2	3.60
5/8	3 3/4	2 1/2	4.50
3/4	4	2 3/4	5.50
7/8	4 1/2	3	8.50
1	5	3 1/4	13.00
	6	3 3/4	19.00

RING BOLTS TO RIVET

Galvanized Wrought Iron. Drop Forged



Size inches	Length under the Eye inches	Inside diameter of Ring inches	Galvanized per doz.	Size inches	Length under the Eye inches	Inside diameter of Ring inches	Galvanized per doz.
1/4	4	1 3/4	$1.60	5/8	5 1/2	2 1/2	$4.50
5/16	4 1/4	2	2.40	3/4	5 1/2	2 3/4	5.50
3/8	4 1/2	2	2.80	7/8	6	3	8.50
7/16	4 3/4	2 1/4	3.20	1	7	3 1/4	13.00
1/2	5 1/4	2 1/2	3.60		8	3 3/4	19.00

These bolts not carried in stock; to order only.

SCREW EYE BOLTS

Galvanized Wrought Iron. Drop Forged

Size, inches	Length under the Eye inches	Regular: Inside diameter of Eye, inches	Regular: Galvanized per doz.	Small Eye. To Order: Inside diameter of Eye, inches	Small Eye. To Order: Galvanized per doz.
1/4	2	1/2	$1.20	5/8	$1.20
5/16	2 1/4	5/8	1.40	7/8	1.40
3/8	2 1/2	3/4	1.60	1/2	1.60
7/16	2 3/4	3/4	2.00	3/4	2.00
1/2	3 1/4	1	2.40	5/8	2.40
5/8	3 3/4	1 1/4	2.80	3/4	2.80
3/4	4	1 3/4	3.20	7/8	3.20
7/8	4 1/2	1 1/2	5.80	1	5.80
1	5	1 3/4	8.50	1 1/8	8.50
	6	2	10.00	1 1/4	10.00

Extra lengths of each size, of both Regular and Small Eye, furnished to order at special prices.

WELDLESS EYE NUT

Galvanized. Drop Forged

Size of Hole inches	Length of Thread inches	Size of Eye inches	Size of Stock in Eye inches	Diameter of Base inches	Weight pounds	Blank Each	Threaded each
3/4	1 1/4	1 3/8	3/4	2	2	$0.60	$0.85
1	1 5/8	1 3/4	1	2 1/4	3 3/8	.70	.90
1 1/4	1 7/8	2	1 1/4	2 3/4	5 3/4	1.20	1.40
1 1/2	2 1/8	2 1/2	1 1/2	3 1/8	8 1/4	1.50	1.75
1 3/4	2 3/8	3	1 1/2	3 1/2	11 1/4	2.50	3.00
2	3	3 1/2	1 5/8	4	18	3.50	4.00

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

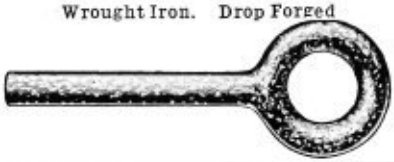
NUT EYE BOLTS

Galvanized Wrought Iron. Drop Forged

Size Inches	Regular			Extra Lengths to Order	
	Length Under the Eye, Inches	Inside Diameter of Eye, Inches	Per Doz.	Length Under the Eye, Inches	Per Doz.
1/4	2	1/2	$1.40	4	$1.80
5/16	2 1/4	5/8	1.60	4 1/4	2.10
3/8	2 1/2	3/4	1.80	4 1/2	2.30
7/16	2 3/4	7/8	2.30	4 3/4	2.85
1/2	3 1/4	1	2.60	5 1/4	2.15
9/16	3 3/4	1 1/8	3.10	5 1/2	3.70
5/8	4	1 1/4	3.60	5 3/4	4.30
3/4	4 1/2	1 1/2	6.20	6 1/2	7.25
7/8	5	1 3/4	9.00	8	10.75
1	6	2	12.00	9	14.00

GALVANIZED EYE BOLTS TO RIVET

Wrought Iron. Drop Forged



Size Inches	Regular			Small Eye to Order
	Length Under the Eye, Inches	Inside Diameter of Eye, Inches	Per Doz.	Inside Diameter of Eye, Inches
1/4	4	1/2	$1.20	3/8
5/16	4 1/4	5/8	1.40	7/16
3/8	4 1/2	3/4	1.60	1/2
7/16	4 3/4	7/8	2.00	9/16
1/2	5 1/4	1	2.40	5/8
9/16	5 3/8	1 1/8	2.80	3/4
5/8	5 1/2	1 1/4	3.20	7/8
3/4	6	1 1/2	5.80	1
7/8	7	1 3/4	8.50	1 1/8
1	8	2	10.00	1 1/4

SCREW HOOKS

Galvanized Wrought Iron

Size, inches	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
Extreme Length	4	4 1/4	4 3/4	5 1/4	5 7/8	5 7/8	6 1/4	7 1/4	8 1/8	8 1/2
Per Doz.	$0.80	$0.90	$1.00	$1.40	$1.80	$2.30	$2.60	$4.20	$6.00	$9.00

S HOOKS

Galvanized Wrought Iron

Size, Inches	5/16	1/4	5/16	3/8	7/16	1/2	5/8
Length	1 1/2	1 3/4	2 1/4	2 5/8	3	3 1/2	4
Per Doz.	$0.35	$0.40	$0.50	$0.75	$1.00	$1.25	$1.60

Complete assortment of these goods in our Marine Catalogue. If interested, send for it.

WROUGHT IRON HOOKS

Single Hooks with Open Thimbles

Size, inches	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	..
Black, per doz.	$1.40	$1.50	$1.60	$1.70	$1.80	$2.00	$2.25	$3.00	$4.00	....
Galv., "	1.50	1.60	1.75	1.90	2.00	2.25	2.50	3.50	4.50	....
Size, inches	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2
Est. wt., each, lbs.	3	3 1/2	4	6	8	9 1/2	12	18	24	34

Black, per lb. $0.16
Galv., " ..... .20

SISTER OR MATCH HOOKS

With Open Thimbles

Size, inches	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	..
Black, per doz.	$2.40	$2.40	$2.40	$2.50	$2.55	$2.75	$3.25	$4.25	$6.25	....
Galv., "	2.50	2.50	2.50	2.60	2.75	2.90	3.50	4.75	6.75	....
Size, inches	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2
Est. wt., each, lbs.	3	4	5 1/4	7	9 1/2	10 3/4	14	21	27	33

Black, per lb. $0.18
Galv., " ..... .22

Measure diameter of iron in largest part of hook in the bend, with hooks closed.

THE "HARTZ" SAFETY LINK HOOK

Diam. Hook.	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2
Complete, each	$1.00	$1.25	$1.50	$2.00	$2.25	$2.50	$3.00	$3.50	$4.00	$4.50	$5.00	$6.00

SINGLE HOOKS

With Wire Rope Thimbles

Size, inches	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	....	. .
Black, per doz.	$1.90	$2.00	$2.10	$2.30	$2.40	$2.60	$3.00	$3.75	$4.75	....	....
Galv., "	2.00	2.10	2.25	2.50	2.60	2.85	3.25	4.25	5.25	....	....
Size, inches	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2
Est. wt., each, lbs.	2 1/4	3 1/4	4 1/2	6	7 1/4	9	13	15	19	25	33

Black, per lb. $0.18
Galv., " ..... .22

MATCH HOOKS

With Wire Rope Thimbles

Size, inches	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8
Black, per doz.	$2.90	$2.90	$2.90	$3.15	$3.20	$3.35	$4.00	$4.75	$6.75
Galv., "	3.00	3.00	3.00	3.25	3.35	3.50	4.25	5.25	7.25
Size, inches	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	....
Est. wt., each, lbs.	3	4	4 1/2	8 1/2	9	10	14	19	....

Black, per lb. $0.20
Galv., " ..... .25

Measure diameter of iron in largest part of hooks in the bend with hooks closed.

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

With Manila Rope Thimbles

SWIVEL HOOKS

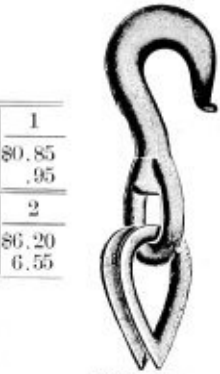
Wrought Iron

Size.....inches	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1
Black ..... each	$0.27	$0.30	$0.33	$0.35	$0.40	$0.70	$0.80	$0.85
Galvanized..... "	.32	.35	.38	.40	.45	.75	.85	.95

Size..... inches	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2
Black..... each	$1.15	$1.45	$2.00	$2.30	$3.20	$4.10	$6.20
Galvanized ..... "	1.20	1.55	2.15	2.45	3.40	4.30	6.55

With Small Eye for Blocks

Size.....inches	3/8	7/16	1/2	5/8	3/4	7/8	1
Black.....each	$0.25	$0.28	$0.30	$0.36	$0.60	$0.70	$0.80
Galvanized..... "	.30	.33	.35	.41	.70	.80	.90



With Wire Rope Thimbles

With Small Eye for Blocks

LOBSTER CLAW

Size	Diam. of Screw, in.	Each
No. 1	1 1/8	$3.50
" 2	1	3.25
" 3	7/8	3.00

OPEN THIMBLES

Steel

Outside Diam. across Hole .	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3
Width of Score ...	3/8	7/16	1/2	9/16	5/8	11/16	3/4	7/8	1	1 3/16	1 1/4	1 7/16	1 1/2
Black..... per doz.	$0.26	$0.26	$0.26	$0.28	$0.30	$0.32	$0.34	$0.40	$0.55	$0.80	$0.95	$1.20	$1.40
Galvanized "	.28	.28	.28	.30	.32	.34	.36	.45	.60	.90	1.10	1.40	1.90

3 1/4 to 8 inches, black, per lb., $0.18; galvanized, per lb., $0.20.

Measure across the hole in the Thimble, from edge to edge.

The hole in the Thimble, also score of the same, will usually equal one half the diameter of the Thimble viz., a three inch Thimble will give a 1 1/2 inch score, and a hole about 1 1/2 inch diameter.

RIGGER SCREWS

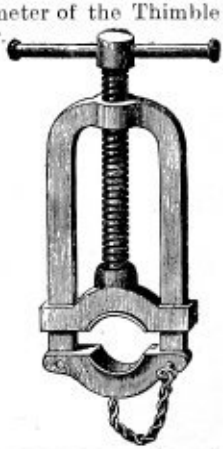
Wrought Iron

For Wire Rope

Size	Diameter of Screw, inches	Each
No. 0	1 3/8	$9.00
" 1	1 1/4	6.25
" 2	1 1/8	4.75
" 3	1	3.50
" 4	7/8	2.75
" 5	3/4	2.25

For Manila Rope

Size	Diameter of Screw, inches	Each
No. 0	1 1/2	$8.50
" 1	1 1/4	4.50
" 2	1 1/8	3.75
" 3	1	2.75
" 4	7/8	2.50



MARLINE SPIKES

Tempered Steel

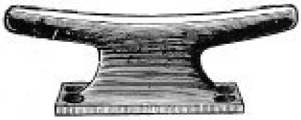
Length .....inches	6	8	9	10	11	12	13	14	15	16	18
Japanned .....per dozen	$1.75	$2.00	$2.60	$3.00	$3.25	$3.50	$4.00	$5.00	$5.50	$6.50	$8.50
Polished..... "	3.00	3.50	3.75	4.00	4.50	5.00	5.50	6.50	7.50	9.50	11.50

WIRE ROPE MARLINE SPIKES—Tool Steel, Polished

Length.... inches	12	14	16	18	20
Per dozen.....	$16.00	18.00	21.00	24.00	27.00

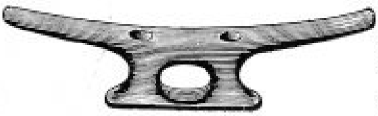
Complete assortment of these goods in Marine Catalog. If interested, send for it.

BOAT CLEATS



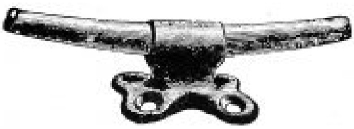
Square Base

Number	1	1½	2	3	4	5	6
Length, inches	2	2¾	3¼	3¾	4½	5½	6
Galvanized Malleable, per dozen	$0.50	.60	.80	1.00	1.75	2.00	3.00
Polished Brass, per dozen	$1.50	2.25	3.00	4.00	5.00	7.50	10.25



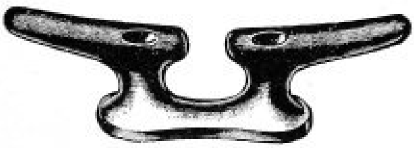
Open Base

Number	7	8	9	10	11	12	13	14	15	16
Length, inches	3½	4½	5½	6	7	8	9	10	12	14
Galv. Malleable per doz.	$1.00	1.40	1.65	2.30	2.80	3.50	4.50	6.00	9.00	15.00
Polished Brass per doz.	$3.00	3.75	5.00	6.50	8.00	11.50	15.00	20.00	25.00	42.00



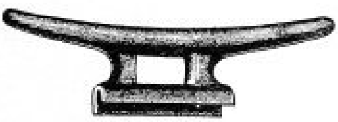
COMBINATION CLEATS
Norcross Patent

Number	20	21	22	23	24	25	26
Length, inches	6	7	8	9	10	11	12
Galvanized Iron and Wood, each	$0.25	.30	.35	.45	.60	.80	1.00
Polished Brass and Wood, each	$0.50	.60	.70	.90	1.20	1.60	2.00



MAIN SHEET CLEATS

Number	1	2	3	4	5	6
Length, inches	6	7	9	12	15	18
Galvanized, each	$0.20	.25	.35	.75	1.00	1.25
Polished Brass, each	$0.75	1.00	1.75	3.25	4.25	5.00

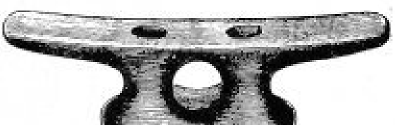


WIRE STAY CLEATS

Number	1	2	3	4	5
Length, inches	3½	4½	5½	6	8
Galvanized, per dozen	$1.50	1.65	1.85	2.50	3.00
Polished Brass, per dozen	$4.25	5.00	6.00	7.25	8.50

ROUND BOTTOM CLEATS

Number	1	2	3
Length, inches	2¼	3	3¼
Galvanized, per dozen	$0.40	.50	.75
Polished Brass, per dozen	$1.20	1.50	2.00



SHIP CLEATS

Heavy, Cast Iron

10½ to 40 inches long.

Plain, per pound $0.06
Galvanized, per pound .... .09

LETTERS AND FIGURES

WITH SOLID CAST PINS ON BACK. NO SCREWS REQUIRED

Letters

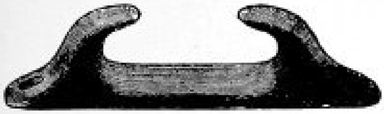
Letters: Length inches	Polished Brass Each	Nickel Plated Each	Figures: Length inches	Polished Brass Each	Nickel Plated Each
1	$0.08½	$0.10½	¾	$0.07	$0.09
1¼	.09	.11½	1	.08	.10
1½	.10	.12	1¼	.08½	.10½
2	.12	.14	1½	.09	.11
2½	.16	.18	2	.10	.12
3	.24	.26	2½	.12	.14
4	.60	.70	3	.14	.16
..	....	....	4	.30	.35

Figures

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

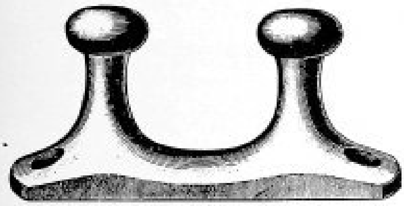
CHOCKS

CAST IRON AND BRASS



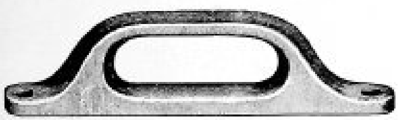
Size inches	Width inch.	Open-ing, in.	Galvanized	Plain	Size inches	Plain Brass doz.	Polish'd Br'ss doz.
3½	13/16	½	$0.75 doz.	$0.70 doz.	3½	$2.40	$3.60
3¾	⅞	⅝	.80 "	.75 "	4	3.60	4.80
4	1⅛	11/16	1.00 "	.90 "	4½	4.80	6.60
4½	1¼	11/16	1.25 "	1.00 "	5	6.00	8.50
5	1⅜	13/16	1.50 "	1.25 "	6	7.80	10.80
5½	1½	1 3/16	1.75 "	1.50 "	7	10.80	15.00
6	1½	1¼	2.25 "	2.00 "	8	18.00	24.00
6½	1½	1 5/16	2.75 "	2.25 "	10	27.00	36.00
7½	1 11/16	1¼	4.00 "	3.50 "	Larger sizes in Brass to order.	Prices on application.	Prices on application.
8½	1⅞	1⅜	6.00 "	5.00 "			
10½	2¼	1⅞	.09 lb.	.06 lb.			
11½	2⅜	2¼	.09 "	.06 "			
13	2⅝	2¾	.09 "	.06 "			
15	2⅞	3½	.09 "	.06 "			
18	3⅛	3¾	.09 "	.06 "			
20	3¾	4⅝	.09 "	.06 "			
22	3¾	6⅜	.09 "	.06 "			
24	4½	6	.09 "	.06 "			
30	4½	6	.09 "	.06 "			

NIGGER HEAD



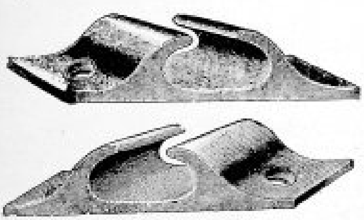
Size	Length inches	Open'g between heads, inches	Galvan-ized, each	Plain each	Plain Brass, each	Polished Brass, each
No. 1	4½	1⅛	$0.12	$0.10	$0.60	$0.80
" 2	6	1⅝	.25	.20	1.00	1.50
" 3	7½	2⅛	.40	.30	1.50	2.25
" 4	9	2⅝	.60	.50	2.25	3.25

CLOSED



Length inches	Galvanized dozen	Plain dozen	Plain Brass dozen	Polished Brass dozen
3½	$0.75 doz.	$0.70 doz.	$2.40	$3.60
4	1.25 "	1.00 "	5.00	6.00
4½	1.50 "	1.25 "	5.40	6.60
5½	2.00 "	1.75 "	8.00	11.50
6	2.75 "	2.50 "	8.40	12.00
6½	3.25 "	3.00 "	10.00	14.00
7½	4.75 "	4.25 "	12.00	16.00
8	6.00 "	5.00 "	13.50	18.00
10	.09 lb.	.06 lb.	24.00	30.00
13, 15, 18 in.	.09 "	.06 "		

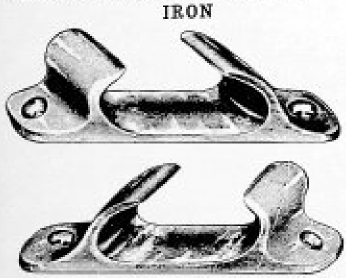
BEVEL OR BOW



IRON

Length, inch.	Galvanized	Plain	Width, inch.	Opening, inch.
3	$0.10 per pair	$0.08 per pair	⅝	5/16
4½	.12 " "	.10 " "	11/16	½
5½	.20 " "	.17 " "	1	¾
6½	.35 " "	.28 " "	1⅛	⅞
6	.60 " "	.50 " "	1½	1
10	.90 " "	.75 " "	1⅜	1⅛
12	1.50 " "	1.25 " "	2¼	1⅜
8½	.12 per pound	.09 per pound	1¾	1⅝
10½	.12 " "	.09 " "	2¾	1¾
12	.12 " "	.09 " "	2½	2⅜
15	.12 " "	.09 " "	3	2⅞
18	.12 " "	.09 " "	3¼	3⅛
20	.12 " "	.09 " "	3½	3¾
24	.12 " "	.09 " "	4	4
30	.12 " "	.09 " "	4¼	6

Measure length at center of base.



BRASS

Length inches	Width inches	Opening for Rope, inch.	Countersunk for Screw No.	Plain Brass per pair	Polished Brass per pair
3	11/16	⅝	8	$0.30	$0.50
4	¾	¾	10	.50	.70
4½	13/16	¾	12	.60	.85
5	⅞	⅞	12	.80	1.15
5½	1	1	14	1.00	1.50
6½	1⅛	1⅛	16	1.50	2.00
8	1¼	1¼	18	2.25	3.00
9	1½	1⅜	18	3.00	4.00
10	1¾	1½	22	3.50	5.00
12	2¼	1⅝	22	5.50	7.00
15	3	3¼	50	25.00	30.00

Length measurements given are for greatest length from corner to corner.

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

BOAT HOOKS

Galvanized Malleable Iron and Brass

SHARP POINTS, SINGLE HOOK

Size	For Diameter Pole inches	Galvanized per Dozen	Plain Brass per Dozen	Polished Brass per Dozen
No. 0	1	$3.50	$7.00	$9.00
" 1	1¼	3.60	8.25	10.50
" 2	1½	4.80	10.00	12.00
" 3	2	5.40	11.75	13.75

Double hooks with sharp points furnished to order.

NAVY, BALL POINTS, SINGLE HOOK

No. 3½	1	$4.60	$7.00	$9.00
" 4	1¼	4.80	8.25	10.50
" 5	1½	5.40	10.00	12.00
" 6	2	6.00	11.75	13.75

NAVY, BALL POINTS, DOUBLE HOOKS

No. 6½	1	$5.25	$7.50	$9.50
" 7	1¼	5.50	9.00	10.75
" 8	1½	7.00	10.50	12.50
" 9	2	8.00	14.00	16.25

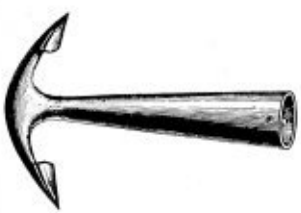
WROUGHT IRON

Size	For Diameter Pole inches	Black, with Polished Points per Dozen	Galvanized per Dozen
No. 10	1	$5.00	$5.00
" 11	1¼	5.50	5.50
" 12	1½	6.00	6.00
" 13	2	6.50	6.50
" 13½	2½	8.00	8.00

IMPROVED BOAT HOOKS

Galvanized Malleable Iron and Brass

Size	For Diameter Pole inches	Galvanized per Dozen	Plain Brass per Dozen	Polished Brass per Dozen
No. 14	1	$3.00	$7.00	$9.00
" 15	1¼	3.60	8.25	10.50
" 16	1½	4.80	10.00	12.00
" 17	1¾	6.00	10.75	13.00
" 18	2	7.20	11.75	14.00



ANCHOR BOAT HOOKS

Plain and Polished Brass

Size	For Diameter Pole inches	Plain Brass per Dozen	Polished Brass per Dozen
No. 19	1½	$12.00	$14.00

BOAT HOOK HANDLES

Length, Feet	4	5	6	7	8	9	10	12
Each	$0.40	0.50	0.60	0.70	0.80	1.00	1.10	1.30

JIB HANKS

Galvanized Wrought Iron

Measure in the clear.

Single Stay

Double Stay

Single Stay		Double Stay	
Size ¾ inch	per doz., $0.55	Size 1½ inch	per doz., $0.85
" ⅞ "	" .60	" 1¾ "	" .90
" 1 "	" .65	" 2 "	" 1.00
" 1¼ "	" .70	" 2¼ "	" 1.10
" 1½ "	" .75	" 2½ "	" 1.30
" 1¾ "	" .80	" 2¾ "	" 1.45
" 2 "	" .90	" 3 "	" 1.65
" 2¼ "	" 1.00	" 3¼ "	" 2.00
" 2½ "	" 1.15	" 3½ "	" 2.50
" 2¾ "	" 1.30	" 3¾ "	" 2.85
" 3 "	" 1.50	" 4 "	" 3.30
" 3¼ "	" 1.75	" 4¼ "	" 3.60
" 3½ "	" 2.25	" 4½ "	" 3.85
" 3¾ "	" 2.70	" 4¾ "	" 4.00
" 4 "	" 3.00	" 5 "	" 4.50
" 4¼ "	" 3.25	" 5¼ "	" 4.75
" 4½ "	" 3.50	" 5½ "	" 5.00
" 4¾ "	" 3.75	" 5¾ "	" 5.25
" 5 "	" 4.00	" 6 "	" 5.50
" 5½ "	" 4.50		
" 6 "	" 5.00		

Small

BARREL HOOKS

Wrought Iron

Large

Size	Galvanized, per pair	Blacked, per pair
Small	$0.85	$0.75
Large	1.00	.90

CAN HOOKS

Wrought Iron

Iron, diam. inches	⅜	7/16	½	⅝	¾	⅞
Galvanized per pair	$0.65	$0.80	$1.00	$1.25	$1.75	$2.25
Blacked "	.60	.70	.85	1.10	1.50	2.00

SOUNDING LEADS

2 to 50 lbs., per lb. $0.12

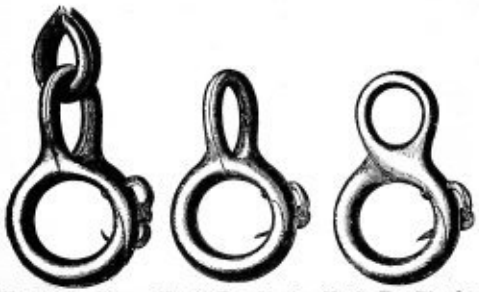
CHAIN HOOKS

Wrought Iron

Galvanized			Blacked		
Length inches	Size of Iron inches	Each	Length inches	Size of Iron inches	Each
24	⅜	$0.50	24	⅜	$0.45
26	½	.75	26	½	70
28	⅝	1.00	28	⅝	.90

GAFF-TOPSAIL SHEET HOOKS

COLEMAN'S PATENT. GALVANIZED



No. 1. For Rope. No. 2. For Chain. No. 3. For Blocks

Size inch	Galvanized Each	Plain Brass Each	Polished Brass Each	Size inch	Galvanized Each	Plain Brass Each	Polished Brass Each
1/4	$0.20	$0.50	$0.75	5/8	$0.75	$1.25	$2.00
5/16	.25	.60	.85	11/16	.95	1.75	2.25
3/8	.30	.75	1.00	3/4	1.15	2.25	2.75
7/16	.40	.90	1.25	7/8	1.40	2.75	3.25
1/2	.50	1.00	1.50	1	1.65	3.25	4.00
9/16	.55	1.10	1.75	...	..	..	..

Sizes larger than 1 inch furnished to order.

HENSHAW'S PATENT. SELF-MOUSING.

Size inch	Without Thimbles Each	With Thimbles Each	Size inch	With Thimbles Each
7/16	$0.35	$0.40	3/4	$0.90
1/2	..	.40	7/8	1.00
5/8	..	.80	..	..

IMPROVED BOAT SNAP HOOKS

GALVANIZED MALLEABLE IRON AND BRASS

Size	Inside Diameter of Eye, inches	For Diameter Stay inches	Galvanized dozen	Plain Brass dozen	Polished Brass dozen
No. 0	7/16	1/4	$1.25	$2.00	$4.00
" 1	5/8	5/16	1.50	2.50	5.00
" 2	3/4	3/8	1.75	3.00	6.00
" 3	7/8	1/2	2.50	4.00	7.00
" 4	1	5/8	2.75	5.00	8.00
" 5	1 1/8	1	3.50	6.50	10.00
" 6	1 1/4	1 1/8	4.00	7.50	12.00

IMPROVED SWIVEL EYE SNAP HOOKS

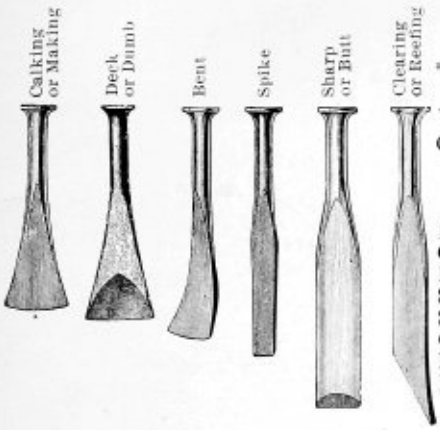
GALVANIZED MALLEABLE IRON AND BRASS

Size	Inside Diameter of Eye, inches	For Diameter Stay inches	Galvanized dozen	Plain Brass dozen	Polished Brass dozen
No. 1	5/8	5/16	$3.00	$5.00	$10.00
" 2	3/4	3/8	3.50	6.00	12.00
" 3	7/8	1/2	5.00	8.00	14.00
" 4	1	5/8	5.50	10.00	16.00
" 5	1 1/8	7/8	7.00	13.00	20.00

LOTHROP'S SNAP FOR JIBS

Size	For Diameter Stay inch	Galvanized dozen	Plain Brass dozen	Polished Brass dozen
No. 0	1/4	$1.25	$2.00	$4.00
" 1	5/16	1.50	2.50	5.00
" 2	3/8	1.75	3.00	6.00
" 3	1/2	2.50	4.00	7.00
" 4	5/8	2.75	5.00	8.00
" 5	7/8	3.50	6.50	10.00
" 6	1	4.00	7.50	12.00

Complete assortment of these goods in our Marine Catalog. If interested, send for it.



CAULKING IRONS

CAST STEEL

	G. B. C. & Co's	Drew's
	Dozen	Dozen
Caulking Irons, No. 0 Crease, 1/16 inch thick	$4.50	$8.00
" " No. 1 " (or making) 1/8 inch thick	4.65	8.00
" " No. 2 " " " 3/16 " "	4.75	8.00
" " No. 3 " " " 1/4 " "	4.85	8.00
Deck or Dumb Irons	5.25	9.00
Crooked or Bent Irons	5.25	9.50
Double Bent Irons	5.75	10.00
Spike Irons	5.00	8.00
Sharp or Butt Irons	6.00	10.00
Clearing or Reefing Irons	5.25	9.00
Reed's Boat Builders' Irons, 1/32 inch thick	....	7.00
Klondike Boat Builders' Irons, 1/32 inch thick	3.00	....
" " " " 1/16 " "	3.25	....
" " " " 1/8 " "	3.50	....

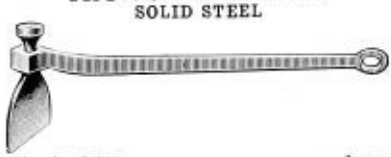
HAWSING BEETLES

WROUGHT RINGS

Live Oak, extra	per dozen $22.00
White Oak	" 17.50
Handles only	" 3.50

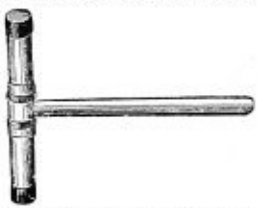
HAWSING IRONS

SOLID STEEL



Black 1/4 inch thick	per dozen $15.00
Polished 1/4 inch	" 20.00

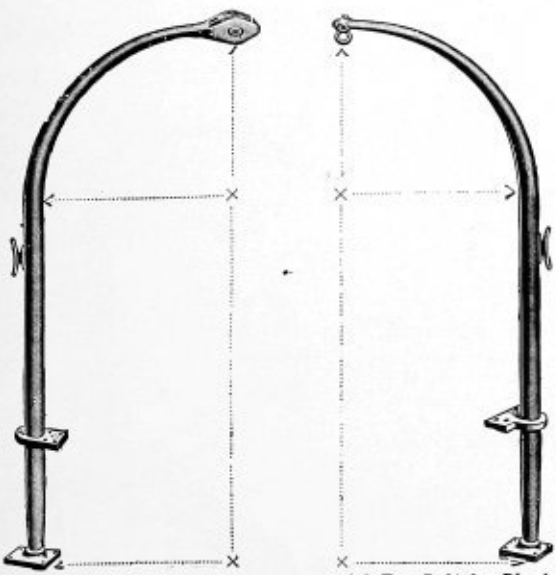
CAULKING MALLETS



No. 000.	Live Oak, tempered Steel Rings, doz.	$30.00
No. 00.	" " " " "	28.00
No. 0.	" polished " " "	25.00
No. 1.	" " " " "	22.00
No. 5.	" Iron Rings	" 18.00
No. 8.	White Oak " "	" 12.00

BOAT DAVITS

BLACK OR GALVANIZED



With Double Sheaves and Eyes for Guys

With Eye Bolt for Block and Eyes for Guys

ANCHOR DAVITS

BLACK OR GALVANIZED

With Single Sheave

We make Davits to order only. Fill in the above dimensions with diameter of davit, and state whether hollow or solid steel. If rail-plate requires a brace, give distance from top of rail to deck, also distance from center of davit to foot of brace.

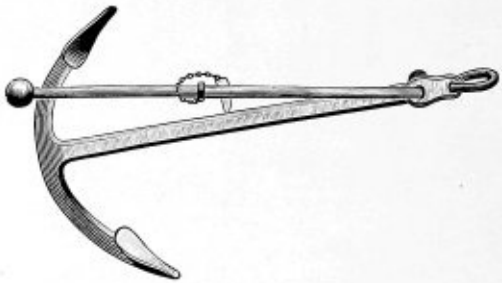
We also make Davits with a plain head and a bole to use a block with swivel jaws.

ANCHORS

WROUGHT IRON KEDGE

Size lbs.	Length inches	Black Each	Galvan'd Each	Size lbs.	Length inches	Black Each	Galvan'd Each
4	15½	$.58	$.70	10	24	$1.08	$1.42
5	16	.67	.83	12	27	1.17	1.53
6	18	.75	.95	14	27	1.25	1.63
7	22	.83	1.07	16	29	1.33	1.76
8	23	.93	1.20	18	29	1.42	1.88
9	23	1.00	1.30	20	31	1.50	2.00

25 to 100 lbs. Black, per lb..... Galvanized, per lb.....
105 to 350 " " " .... " " ....
Over 350 " " " .... " " ....



Open

Folded

DIRIGO FOLDING ANCHOR

Galvanized Iron

Size lbs.	Length inches	Each	Size lbs.	Length inches	Each
4	17	$1.25	12	25	$3.00
6	19	1.50	16	28	3.50
8	22	2.00	20	30	4.50
10	23	2.50	26 lbs. up	33	.20 lb.

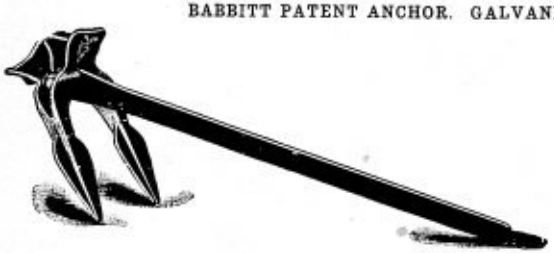
The larger sizes in stock weigh about, lbs.,	30	44	55	76
Length.....inches	34	38	41	44

BRASS—For Canoes

Size pounds	Plain Each	Polished Each	Nickel Plated Each
4	$4.00	$5.00	$5.50

STOCKLESS ANCHORS

BABBITT PATENT ANCHOR. GALVANIZED IRON. WITH CAST STEEL HEADS



Suitable for all Kinds of Bottoms

No.		Each	No.		Each
0.	7½ lbs.	$1.25	6.	76 lbs.	$10.00
1.	12 "	2.50	7.	100 "	13.50
2.	18 "	3.25	8.	125 "	16.85
3.	26 "	4.40	9.	150 "	20.25
4.	36 "	5.75	10.	200 "	27.00
5.	56 "	7.50	11.	250 "	33.75

BALDT STOCKLESS ANCHOR

The Baldt Anchor is made of the finest quality of open hearth steel, and guaranteed to stand a tensile strength of 60,000 to 70,000 pounds per square inch with an elongation of 15 to 20 per cent in 8 inches, and with a reduction of area of 20 to 30 per cent.

We can furnish on short notice anchors ranging in weight from 50 pounds to 15,000 pounds.

For Chain, see pages 61 and 62. For Shackles, see page 621. For table of suitable Anchors and Chains for steam and sailing vessels, see pages 65 and 66

ANCHORS

CAPE COD FOLDING

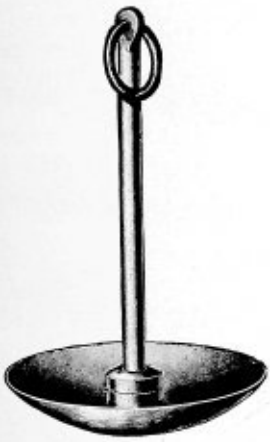
GALVANIZED

Size	Each	Size	Each
4 lbs.	$1.25	12 lbs.	$3.00
6 "	1.50	16 "	3.50
8 "	2.00	20 "	4.50
10 "	2.50		

Larger sizes, weighing approximately 25, 30, 35, 40, 50, 75 and 100 pound, 20c. per pound.

BRASS

For Canoes: Size 4 pounds; plain, $4.00; polished, $5.00; nickel plated, $5.50, each.



MUSHROOM

GALVANIZED OR BLACK

Steel Shank—Riveted to Head

	Galvanized Each	Black Each
10 lbs.	$0.80	$0.60
15 "	1.20	.90
20 "	1.60	1.20
25 "	2.00	1.50
35 "	2.80	2.10
50 "	3.25	2.25
75 "	4.88	3.38
100 "	6.50	4.50
150 "	9.75	6.75
200 "	13.00	9.00
250 "	16.25	11.25
300 "	19.50	13.50
350 "	22.75	15.75
400 "	26.00	18.00

Larger sizes made to order.

GRAPPLINGS

GALVANIZED WROUGHT IRON

With Four or Five Prongs

	Each
3 lbs.	$0.60
3½ "	.70
4 "	.80
4½ "	.90
5 "	1.00
6 "	1.20
7 "	1.40
8 "	1.60
10 "	1.75
12 "	1.92
15 "	2.40
20 "	3.20
25 "	4.00

Larger sizes made to order.

IMPROVED MOORING

Made in all sizes to order.

Per lb.....$....

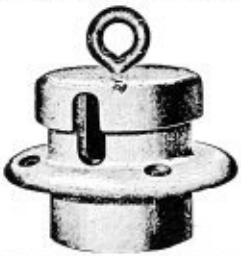
For Chain, see pages 61 and 62. For Shackles, see page 621. For table of suitable Anchors and Chains for Steam and Sailing Vessels, see pages 65 and 66.

WATER DECK IRONS

ROUND FLANGE

Opening inches	Each	
	Plain	Galv.
3	$0.40	$0.60
3½	.45	.65
4	.55	.75
4½	.65	.90
5	.75	1.00
5½	.90	1.20
6	.95	1.30
6½	1.05	1.45
7	1.10	1.50
8	1.20	1.65
9	1.50	2.00
10	1.70	2.30
11	2.50	3.00
12	3.25	3.75

CHAIN DECK PIPES



einchs	For Dia. Chain	Galvanized each	Plain Brass each	Polished Brass, each
1¾	3/16	$0.50	$1.50	$2.00
2	¼	.65	2.00	3.00
2¼	5/16	.70	3.50	5.00
2½	3/8	.75	4.00	6.00
3	½	1.00	5.00	7.00
3½	5/8	1.50	7.00	10.00
4	¾	2.50	....	....
4½	7/8	3.00	....	....
5	1	3.25	....	....
5½	1⅛	4.00	....	....
6	1¼	4.25	....	....

GLASS DECK LIGHTS

HEXAGON POINTED

3 in. diam. of face..per doz., $4.00
4 " " " " " " 8.00

RIBBED

6 x3 inches.....each, $0.50
9½x2½ " ..... " .60
10 x3 " ..... " .75
10½x3½ " ..... " 1.00
12 x4 " ..... " 1.25

Plain Glass Deck Lights, round or square, furnished to order.

BRASS PORT LIGHTS

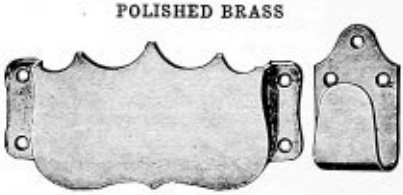
MONITOR PATTERN

Size of Opening inches	Galvanized Iron each	Plain Brass each	Polished Brass each
3	$2.50	$2.75	$4.50
4	2.75	3.00	5.00
5	3.00	3.25	6.50
6	4.00	4.25	7.50
7	4.75	5.00	8.25
8	5.75	6.00	8.75
9	7.50	8.00	13.50
10	11.00	12.00	15.00
11	12.50	14.00	17.50
12	20.00	24.00	28.00

12-inch are made with 2 Thumbscrews.

AXE BRACKETS

POLISHED BRASS



No. 1. 4 inch Pockets.....per dozen, $10.00
No. 2. 5 " " ..... " " 12.00
No. 3. 6 " " ..... " " 15.00

For Axes, see page 520.

LEADERS FOR WHEEL ROPES

GALVANIZED

For use on steamboats, under the deck

Iron frame, lignum-vitæ roller 3¼ inches diameter by 1⅛ inches thick.....each, $0.75

Complete assortment of these goods in our Marine Catalog. If interested, send for it.

FLAG STAFF SOCKETS

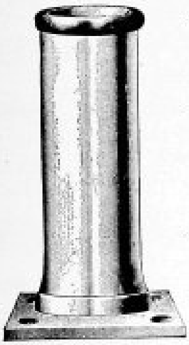
FLUSH

Bow or Straight

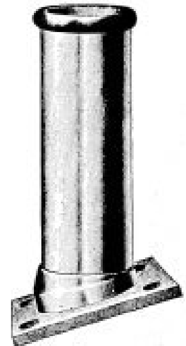
Stern or Beveled

Inside Diam. inches	Depth inches	Galvanized		Plain Brass		Polished Brass	
		Bow Each	Stern Each	Bow Each	Stern Each	Bow Each	Stern Each
¾	1½	$0.20	$0.30	$0.35	$0.45	$0.40	$0.50
1	2¼	.25	.35	.40	.50	.50	.60
1¼	2½	.35	.45	.50	.60	.60	.70
1½	3	.45	.55	.60	.75	.80	.90
1¾	3½	.55	.70	.80	.90	1.00	1.10
2	3¾	.75	.90	1.00	1.10	1.25	1.35

UPRIGHT—To Screw on Deck



Bow



Stern

Inside Diam. inches	Size of Base inches	Counter-sunk for Screw No.	Galvanized		Plain Brass		Polished Brass	
			Bow Each	Stern Each	Bow Each	Stern Each	Bow Each	Stern Each
¾	2 x2	10	......	......	$0.35	$0.40	$0.55	$0.75
⅞	2⅛x2⅛	10	......	......	.40	.50	.65	.85
1	2⅝x2⅝	10	$0.35	$0.40	.50	.60	.75	1.00
1¼	2¾x2¾	12	.45	.50	.60	.75	.85	1.10
1½	3¼x3¼	14	.55	.65	.75	1.00	1.00	1.25
1¾	3¾x3¾	14	.80	.90	1.25	1.50	1.50	1.75
2	4½x4½	14	1.00	1.25	1.50	1.75	2.00	2.25

STANCHION POSTS

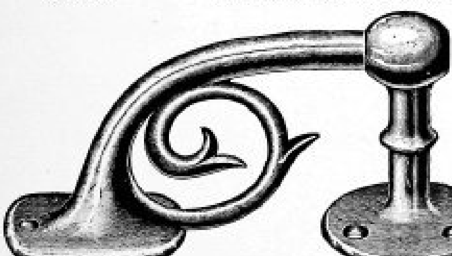
GALVANIZED IRON AND POLISHED BRASS

Corner

Center or End

Size No.	Extreme Height of Post inches	Diameter of Hole inches	Center or End		Corner	
			Galvanized Each	Polished Brass, Each	Galvanized Each	Polished Brass, Each
1	2	½	$0.15	$0.25	$0.25	$0.40
1½	2	⅝	.15	.25	.25	.40
2	2½	½	.20	.35	.30	.45
2½	2½	⅝	.20	.35	.30	.45
3	3	½	.30	.50	.40	.60
3½	3	⅝	.30	.50	.40	.60
4	3½	⅝	.40	.65	.50	.75
4½	3½	¾	.40	.65	.50	.75
5	4	⅝	.50	.80	.60	.90
5½	4	¾	.50	.80	.60	.90
6	4½	⅝	.65	1.00	.75	1.10
6½	4½	¾	.65	1.00	.75	1.10
7	5	¾	.80	1.25	.90	1.35
7½	5	⅞	.80	1.25	.90	1.35
8	5½	¾	1.00	1.50	1.10	1.60
8½	5½	⅞	1.00	1.50	1.10	1.60
9	6	¾	1.25	2.00	1.40	2.15
9½	6	⅞	1.25	2.00	1.40	2.15

When ordering state how many are for End and how many are for Center Posts.



SCROLL ENDS

COMPLETE WITH ONE STANCHION POST

Size, No.	Extreme Height of Post, ins.	Bored for Tubing inch O. D.	Counter-sunk for Screw No.	Galvanized Iron Each	Polished Brass Each	Size, No.	Extreme Height of Post, ins.	Bored for Tubing inch O. D.	Counter-sunk for Screw No.	Galvanized Iron Each	Polished Brass Each
1	2	½	8	$0.90	$1.50	3½	3	¾	8	$1.50	$2.25
1½	2	⅝	8	.90	1.50	4	4	¾	10	1.80	3.00
2	2½	½	8	1.15	2.00	4½	4	⅞	10	1.80	3.00
2½	2½	⅝	8	1.15	2.00	5	5	¾	10	2.10	3.50
3	3	⅝	8	1.50	2.25	5½	5	⅞	10	2.10	3.50

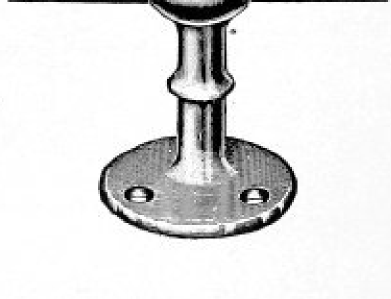
BRASS HAND RAIL

NO. 18 GAUGE

Outside Diameter	Plain per foot	Polished per foot	Nickel Plated per foot
½	$0.16	$0.20	$0.30
⅝	.20	.24	.34
¾	.24	.28	.38
⅞	.28	.32	.42

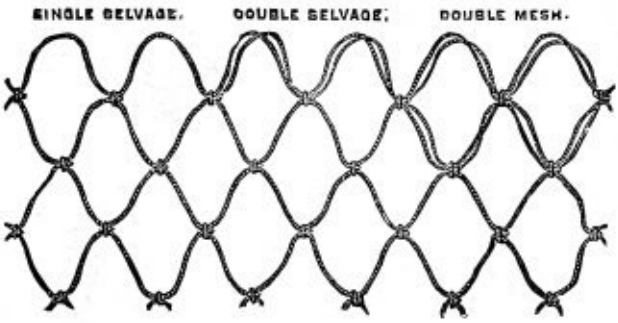
Bending to Shape Extra

Complete assortment of these goods in our Marine Catalog. If interested, send for it.



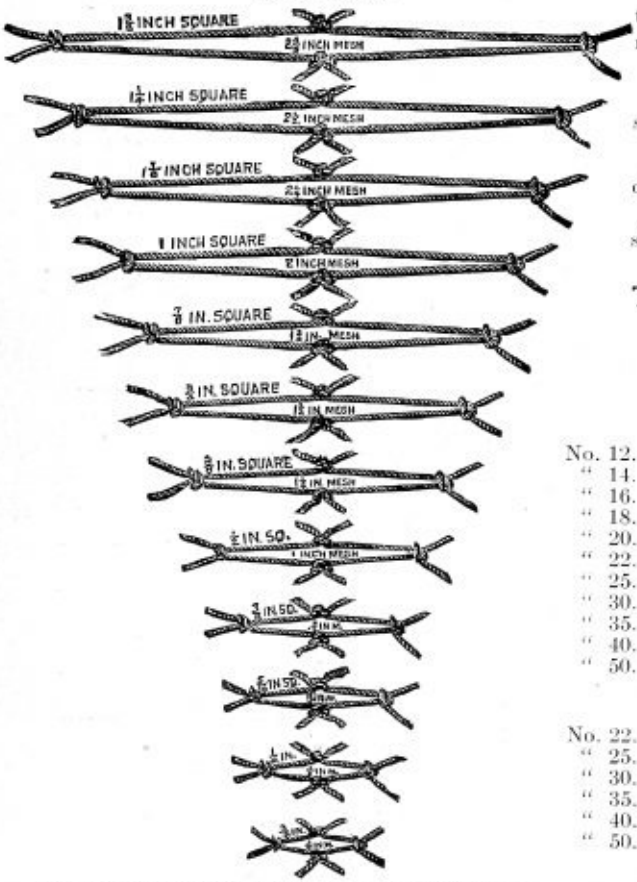
FISHING MATERIAL

IMPORTANT SUGGESTIONS



We always measure a mesh stretched (see cut below). If you give square or bar measure, always say so.

Size of Meshes



All mesh measurements given in this catalogue are "extension" or "stretched" as per cut—not square measure.

We call the attention of our patrons to a number of particulars, very important in ordering netting, but which are frequently disregarded. These omissions often cause annoying delays in filling orders, as it becomes necessary to write for fuller instructions. We therefore advise every one, when ordering or writing for estimates, to regard the following suggestions as much as possible:

Give full description of net in question, stating its length, depth, size of mesh and size of twine. If you are not acquainted with the numbers and sizes of twines, state the kind of fish you want to catch, and the way you propose to fish for it.

Always state whether the netting is to hang the dimensions given when on ropes, or is to measure those dimensions when stretched.

When convenient, give depth of net in meshes.

State whether you want double mesh, double selvage, or single selvage as per cut.

State whether you want goods tarred, barked or white.

We make Netting from ⅜-inch mesh to any size required.

TABLE OF WEIGHTS OF GILL NETTING

BEST LINEN GILLING

(Stretched Measure.)

Running Yards in 1 lb. 3 Cord

No. 12.	30	meshes	deep,	any	size	mesh,	about	16 yds
" 14.	30	"	"	"	"	"	"	18 "
" 16.	30	"	"	"	"	"	"	21 "
" 18.	30	"	"	"	"	"	"	25 "
" 20.	30	"	"	"	"	"	"	31 "
" 22.	30	"	"	"	"	"	"	32 "
" 25.	30	"	"	"	"	"	"	37 "
" 30.	30	"	"	"	"	"	"	46 "
" 35.	30	"	"	"	"	"	"	56 "
" 40.	30	"	"	"	"	"	"	60 "
" 50.	30	"	"	"	"	"	"	67 "

Running Yards in 1 lb. 2 Cord

No. 22.	30	meshes	deep,	any	size	mesh,	about	44 yds.
" 25.	30	"	"	"	"	"	"	52 "
" 30.	30	"	"	"	"	"	"	68 "
" 35.	30	"	"	"	"	"	"	80 "
" 40.	30	"	"	"	"	"	"	86 "
" 50.	30	"	"	"	"	"	"	95 "

Running Yards in 1 lb. 28-4 Cord

No. 28–4. Sea Isand, 30 meshes deep, about 85 yards.

For price list of Gill Netting, see page 639.

POUND NETS OR TRAPS

As the catching of fish, in some kind of set trap or weir, is one of the principal methods used in almost every branch of the fisheries all over this American continent, the Trap and Pound Net Department naturally becomes one of special importance. The styles and sizes of the various traps made are innumerable, varying with the particular ideas of the men who set them and conditions of the locality where used. The general shape and principle of them all, however, is very much the same, and we endeavor, for the benefit of those not posted, to show the manner in which the kind most used on the Great Lakes are made and set.

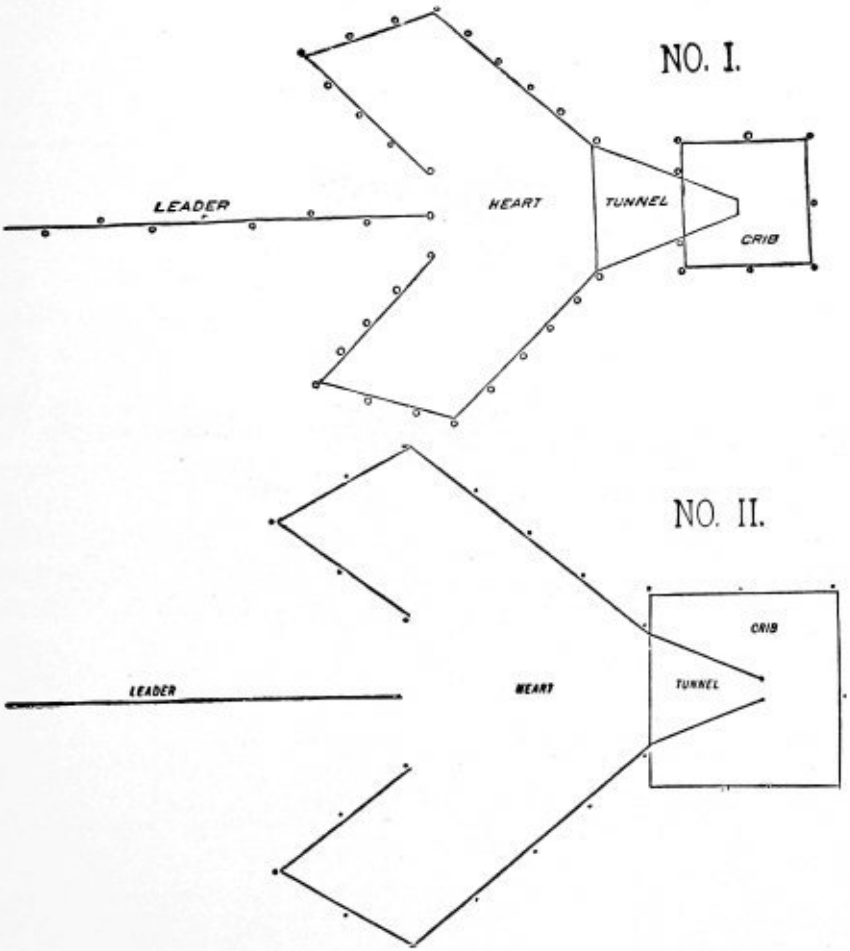
We carry in stock a large assortment of Cotton Netting, and can furnish Pound Nets and Seine Webs, cut from the web, on short notice. It is better, however, to order your netting so as to give us time to make each piece to order, thus giving a more uniform selvage and saving the waste which follows when cut from the web.

We are prepared to furnish Leaders and Tunnels for Traps in any shape or size required; also to hang Pound Nets, Traps or Seines, any size or shape, on short notice.

When ordering Netting of any kind, to avoid mistakes and delays, be sure to follow instructions on pages 636.

For prices per pound of all sizes of Pound and Trap Netting, see page 638.

FLOOR PLANS FOR POUND NETS



We represent above two floor plans of pound nets.
No. 1 is of Net, as per cut on page 638 with long tunnel now generally used on the lakes.
No. 2 is the same except with short tunnel.
Any particular explanation and estimates of cost, for any kind or size, given on application.
For price on Cotton Netting, see page 638.

COTTON POUND NETTING

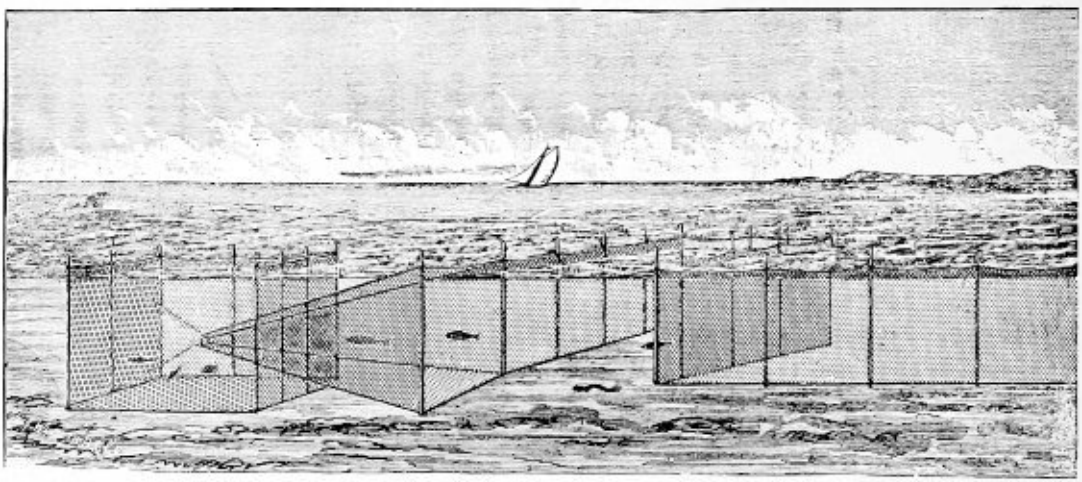
FOR SEINES, POUNDS AND TRAPS

We carry in stock a large assortment of Cotton Netting, and can furnish Pound Nets and Seine Webs, cut from the web, on short notice. It is better, however, to order your Netting so as to give us time to make each piece to order, thus giving a more uniform selvage and saving the waste which follows when cut from the web.

Number of Threads	Size of Mesh, Stretched Measure						
	¾ inch	1 inch	1¼ inch	1½ inch	1¾ inch	2 to 3 ins.	3 inches and up
6	$1.05	$0.95	$0.85	$0.75	$0.70	$0.62	$0.60
9	.95	.75	.70	.62	.55	.49	.47
12	.85	.70	.65	.58	.51	.45	.43
15 and up	.90	.75	.63	.55	.48	.42	.40

Hard laid 10 cents per pound more. Barking or tarring, 3 cents per pound; both. 5 cents.

LAKE POUND



Hanging

We represent above one stlye of net. This Pound is represented with one side of the heart and crib taken away to show the inside of the trap more clearly.

For ground plans, see page 637.

The material used by us in hanging Pounds, Seines, etc., is the best we can procure. Manila and hemp cordage, tarred and stretched, manufactured especially for our use, and laid up particularly for fishing purposes, always in stock at lowest market prices.

We hang Pounds, Seines, etc., in every style, to order, to suit the customers.

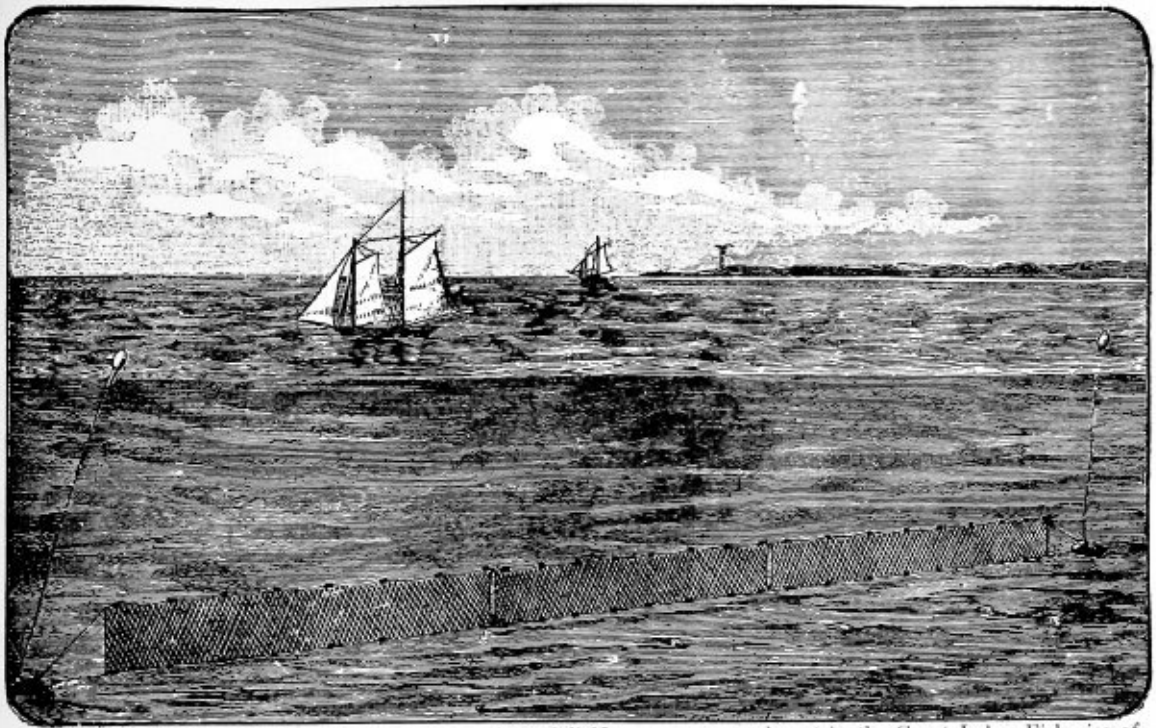
INSTRUCTIONS FOR ORDERING

Parties ordering Webs for Seines or Pounds should give length and depth required when hung on the lines. State what kind of border is wanted, etc. (see page 636). We allow one third for hanging; that is, if a Seine is to be 100 yards long and 10 feet deep, when on lines, we would make the webbing 150 yards long and 15 feet deep, stretched measure.

In ordering, give full description of what you want — leave nothing to be guessed at. Estimates of cost and weight of any size Netting given on applietaton. We do not hold ourselves responsible for netting that has been tanned or tarred, after it leaves our premises.

No goods will be exchanged or taken back that have been tarred, tanned or wet.

Mesh measurements are extension measures (see page 636).



The above picture represents the way in which Gill Nets are commonly set in the Great Lakes Fisheries of America. These Nets are made for taking whitefish, ciscoes, trout, pickerel, shad, bass, perch, mullet, suckers, etc. We will be pleased to give any desired information in regard to the making or method of fishing with these nets.

LINEN GILL NETTING

Stretched Measure

Size of Twine	Size of Mesh: 4 Inch and Larger	3½ and 3⅜	3 and 3⅛	2½ and 2⅞	2 and 2⅝
No. 12-3C'd	$1.15	$1.20	$1.25	$1.30	$1.40
" 14-3 "	1.25	1.30	1.35	1.40	1.50
" 16-3 "	1.30	1.35	1.40	1.45	1.55
" 18-3 "	1.40	1.45	1.50	1.55	1.65
" 20-3 "	1.45	1.50	1.55	1.60	1.70
" 22-3 "	1.55	1.60	1.65	1.70	1.80
" 25-3 "	1.65	1.70	1.75	1.80	1.90
" 30-3 "	1.80	1.85	1.90	1.95	2.05
" 35-3 "	2.00	2.05	2.10	2.15	2.25
" 40-3 "	2.20	2.25	2.30	2.35	2.45
" 45-3 "	2.40	2.45	2.50	2.55	2.65
" 50-3 "	2.65	2.70	2.75	2.80	2.90
" 60-3 "	3.35	3.40	3.45	3.50	3.60

Size of Twine	Size of Mesh: 4 Inch and Larger	3½ and 3⅜	3 and 3⅛	2½ and 2⅞	2 and 2⅝
No. 25-2C'd	$1.80	$1.85	$1.90	$1.95	$2.05
" 30-2 "	1.95	2.00	2.05	2.10	2.20
" 35-2 "	2.15	2.20	2.25	2.30	2.40
" 40-2 "	2.40	2.45	2.50	2.55	2.65
" 45-2 "	2.75	2.80	2.85	2.90	3.00
" 50-2 "	3.10	3.15	3.20	3.25	3.35
" 60-2 "	4.15	4.20	4.25	4.30	4.40

In ordering, give depth of Netting in meshes, say what kind of border, etc., (see page 636).

SEA ISLAND COTTON GILL NETTING

Size of Thread	Size of Mesh: 1¼ Inch	1⅛ Inch	1½ Inch	1⅜ Inch	1¼ Inch	1⅛ Inch	2 and 2⅛ Inch	2¼ and 2⅜ Inch
No. 28-4 Cord	$2.24	$2.14	$2.05	$1.98	$1.92	$1.86	$1.81	$1.73
" 30-3 "	2.83	2.68	2.55	2.44	2.34	2.26	2.19	2.06
" 40-3 "	3.53	3.33	3.15	3.00	2.87	2.77	2.66	2.50

Notice.— We always have a large stock of Gill Netting on hand, both linen and cotton, and can fill orders for ordinary quantities and regular sizes at once. For large lots and special sizes, can make to order in two to three weeks. We have as good facilities for manufacturing these goods as any house in the country, and by comparing our goods and prices with other concerns you will find our prices fully as low as others for the same quality of goods. Mesh measurements are extension measures (see page 636).

FINE SEINE AND GILL NETTINGS

Made of Gold Medal Twine, Hawser and Cable Laid

FOR SHAD, MACKEREL, HERRING, BLUEFISH, MULLETT, SMELT, Etc.

Inch Mesh	1 in.	1¼ in.	1⅜ in.	1½ in.	1⅝ in.	1¾ in.	1⅞ in.	2 to 3⅛ in	4 in. and up
14–6 hawser	$1.20	$1.05	$0.95	$0.90	$0.85	$0.80	$0.75	$0.70	$0.65
20–4 plain	1.35	1.15	1.08	1.00	.95	.90	.85	.80	.75
20–5 "	1.25	1.10	1.00	.95	.90	.85	.80	.75	.70
20–6 cable or hawser	1.60	1.40	1.30	1.20	1.10	1.00	.95	.90	.85
20–9 " "	1.25	1.10	1.00	.95	.90	.85	.80	.75	.70
20–12 " "	1.20	1.05	.95	.90	.85	.80	.75	.70	.65
30–6 cable	2.20	2.00	1.80	1.60	1.40	1.30	1.20	1.10	1.05
36–6 "	2.30	2.10	1.90	1.70	1.50	1.40	1.30	1.20	1.15

Mesh measurements are stretched or extension measure. See page 636.

In Cotton Gilling we have a very large and complete assortment always on hand.

We can furnish Gill Nets mounted or in the web, mackerel, herring, mullett, shad, menhaden, trout, pickerel bass, and for other kinds of fish, of any length, depth or size of mesh, at the shortest possible notice.

Name the kind of fish you wish to catch, and write for particulars.

NOTE.—Netting on this page made to order only.

LINEN GILLING THREAD

Two and Three Cord ½ Pound Balls.

Nos.	12	16	20	25	30	35	40	45	50
Knox's Best, per lb.	....	....	....	$1.65	$1.80	$2.00	$2.20	....	$2.65
Standard or A quality	$0.90	$1.05	$1.15	1.25	1.50	1.75	1.95	$2.10	2.30

SEA ISLAND COTTON GILLING TWINE

No. 28–4, 30–3, 40–3 ..... per lb. $1.00

NETTING NEEDLES

For ½ inch to 1 in. mesh wood ..... each $0.10
" 1¼ " " 1½ " " " ..... " .15

For ½ inch mesh rubber, ... each $0.35
" ¾ inch to 1 inch mesh rubber ..... " .40
" 1¼ inch to 1½ " " " ..... " .45

Write for particulars concerning any kind of Net or Seine wanted and not especially enumerated in this catalogue, and information will be cheerfully given.

COLUMBIA COTTON SEINE TWINE AND MAITRE LINES

We wish to call the fisherman's attention to our Columbia Seine Twines for Pound Nets and Seines, and the hand laid Columbia Maitre or Gill Nets. As to quality of cotton and uniformity in size and twist, it has no superior. Try it and you will use no other.

The following is a list of the different kinds:

SOFT LAID SEAMING TWINE

6-thread	per lb.	$
9-thread	"	
12-thread and larger	"	

HALF PATENT, OR MEDIUM LAID

This twine is manufactured for Seines and Pound Nets. In this lay it gives the greatest strength, and, consequently, the best wearing results in the water. Is made in one quality only.

6-thread	per lb.	$
9-thread	"	
12 to 42 thread	"	
Larger	"	

PATENT, OR HARD LAID

Manufactured principally for fish lines, chalk lines, mason's lines, and, to a limited extent, for Netting. Is made in one quality only.

6-thread	per pound	$
9-thread	"	
12 thread to 42 thread	"	
Larger	"	

FLOATS

Best White Cedar Round Seine Corks

	Per Hundred	Diameter inches	Per Hundred	Diameter inches	Per Hundred
Seine Floats, oval shape, 3 x5 inches	$3.00	1½	$1.35	3½	$3.00
" " " " 3 x4 "	2.50	2	1.35	4	3.75
" " " " 2½x4 "	2.00	2½	1.80	4½	4.50
" " " " 2 x3 "	1.20	3	2.25	5	5.40
Gill Net and Trammel Net Floats, 1¾x5 inches	1.50	....	....	....	....
" " " " 1¼x5 "	.75	....	....	....	....

BAIT AND FYKE NET HOOPS

Best Second Growth Hickory, Smooth Finish

5	to 16	inch diameter	each	$0.16
18	" 21	" "	"	.17
2	" 2¾	feet "	"	.18
3	" 3¾	" "	"	.24
4	" 5	" "	"	.40
5¼	" 6	" "	"	.65

LEAD SINKERS

For Gill Nets, Seines, Trammel Nets, etc.

GILL NET LEAD

Patented, October, 1883

The annoyance and delay caused by the use of the common form of sinkers, and the trouble and waste necessary to mould same from pig lead, induced a series of experiments, resulting in the invention of the article above.

It is moulded in continuous lengths, coiled on strong reels, which keeps the lead in perfect shape, and insures its easy and safe handling in shipment. It can be quickly and cleanly cut without waste into lengths with the ordinary tobacco cutter (costing fifty cents).

This lead may be readily and securely fastened to the Maitre Lines, with a block of wood and a mallet, and as readily removed by the aid of a chisel, or a pair of opening pliers.

We have in stock ½, ⅝, and ¾ inch, outside diameter, but can furnish any size wanted. Per pound $....

CAST GILL NET SINKERS

Weight, 4½ ounces each, per pound ..... $....

IMPROVED CAST LEAD SINKERS

16 to pound.....
12 " " .....
8 " " .....
4 " " .....
} Per pound $0.14

LEAD PIPE

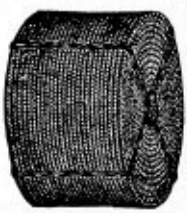
A full line of lead pipe, all sizes, also pig lead, always on hand, at lowest market prices.

SCOOP NET HOOPS

Galvanized Wrought Iron

		Per Doz.
10 in. diam.	¼ in. iron	$1.50
11 " "	¼ " "	1.75
12 " "	¼ " "	2.00
14 " "	5/16 " "	3.00
16 " "	5/16 " "	3.50
18 " "	5/16 " "	4.00

CORDAGE



For Manila, Sisal, Regular, and Steam Tarred, see pages 35 and 36.

OARS

For Ash-Spruce Oars, see page 536.

OAR LOCKS

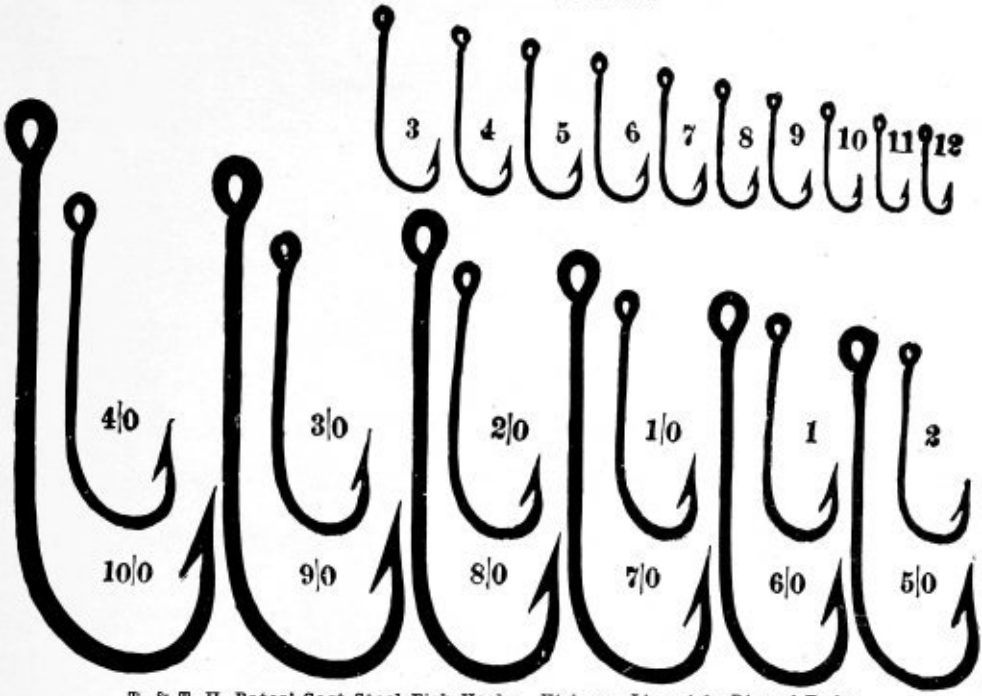
For Oar Locks, see pages 599 to 601.

OIL CLOTHING

For Jackets, Pants, Slickers, Hats, etc., see pages 362 to 365.

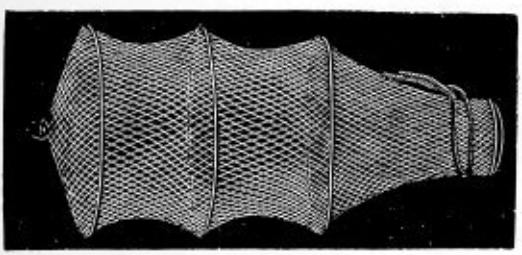
FISH HOOKS

ILLUSTRATIONS ARE FULL SIZE



T. & T. H. Bates' Cast Steel Fish Hooks. Kirby or Limerick, Ringed Ends

12–0	11–0	10–0	9–0	8–0	7–0	6–0	5–0	4–0	3–0	2–0	1–0	1–16	
$8.95	7.05	4.90	3.85	2.95	2.20	1.85	1.45	1.25	1.10	1.00	.90	.80	per 1,000



LIVE NETS

These Nets are to put fish in when caught, keeping them alive.

7 inch is for minnows or bait fish, made of ½ inch mesh, 10, 12, and 14 are for large fish, made of 1½ inch netting.

Diameter, inches	7	10	12	14
Each	$0.45	.35	.40	.45

FISH BAGS

SAME AS LIVE NETS WITHOUT HOOPS

Size of Mesh	1 inch	¾ inch	⅝ inch
2 feet long, 16 twine, per doz.	$2.85	$4.00	$4.80
2½ " " 16 " "	3.72	4.95	6.15
3 " " 16 " "	4.75	6.72	7.95

QUAIL OR PARTRIDGE NETS

Prices are for Net complete, ready for use

No.	Height at Mouth inches	Length of Net feet	Length of each Wing, feet	No. Funnels	Each
1	16	25	20	1	$2.55
2	15	20	20	1	2.40
3	16	20	20	None	2.35
4	16	15	20	None	2.15
5	16	12	15	1	1.90

MINNOW DIP NETS

LINEN MINNOW DIP NETS

Made of best quality imported linen twine.
Following prices are for nets without hoop or ring:

Length of Net inches	Each	Per doz.
12	$0.22	$2.50
16	.30	3.60
20	.42	5.00
24	.53	6.25
30	.73	8.75
36	.92	11.00
48	1.60	19.00
60	2.50	30.00

COTTON MINNOW DIP NETS

Made of best quality No. 20–6 cable cotton twine.
Following prices are for nets without hoop or ring:

Length of Net inches	Each	Per doz.
12	$0.15	$1.80
16	23	2.65
20	.32	3.80
24	.38	4.45
30	.54	6.40
36	.72	8.50
48	1.03	12.20
60	1.70	20.00

Our Minnow Dip Nets have 5/8 inch square mesh top and 3/16 inch square mesh on bottom; will catch the smallest minnow.

ROUND LANDING NETS

Following prices are for Net only, without frame or handle; same style and shape as Minnow Dip Nets.
Our Landing Nets are all 3/4 inch square mesh.

Length of Net inches	Linen per doz.	Cotton per doz.
16	$1.30	$1.00
18	1.50	1.25
20	1.75	1.50
24	2.00	1.75
30	2.50	2.25

ROUND COTTON DIP NETS

Made of cable laid 12-thread cotton seine twine, 1 inch square mesh.

Diameter feet	Length feet	Each
3	3	$0.85
4		1.04
5	4½	1.25
6	5	1.45
7	5½	1.80
8	6	1.95
10	7	2.05
12	8	2.90
14	8	4.65
16	9	6.48
18	10	11.35
20	12	14.45

CAST NET

CAST NETS

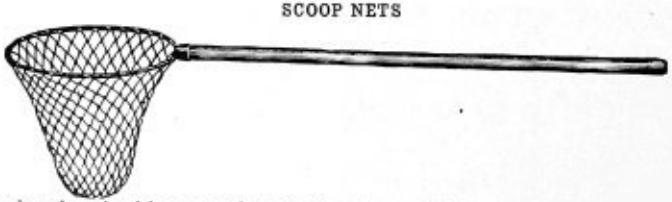
Mounted complete, with spread lines and sinkers.

Depth feet	Mesh square inch	Twine	Each
4½	1	20–9	$3.20
5	1	20–9	3.57
5½	1	20–9	3.90
6	1	20–9	4.28
3½	5/16	20–9	5.70
4	5/16	20–9	7.15
3	3/8	20–6	3.38
3½	3/8	20–6	4.50
4	3/8	20–6	5.25
3	5/8	20–6	3.60
3½	5/8	20–6	3.95
4	5/8	20–6	4.45
5	5/8	20–6	6.30

SQUARE COTTON DIP NETS

Mesh	Twine	4 x 4 ft. Each	5 x 5 ft. Each	6 x 6 ft. Each	7 x 7 ft. Each	8 x 8 ft. Each	9 x 9 ft. Each
1/4	20–6	$1.05	$1.43	$2.25	$3.00	$3.60	$4.58
3/8	20–6	.53	.90	1.28	1.50	2.25	2.63
3/4	9	45	.60	.90	1.13	1.50	1.88
1	12	.30	.38	.53	.68	.90	1.13
1¼	12	.23	.33	.47	.60	.75	.98
1½	12	.21	.32	.42	.53	.68	.87

SCOOP NETS



6 foot ash handle, 12 inch galvanized hoop, and 15 inch net, complete . . . . . each, $0.75

Made of the best quality cotton seine twine, spun in our own mills; rigged complete with never-sink cedar floats and improved cast lead sinkers; ready for use. Lines on our seines are ¼ inch pure Manila hemp, thoroughly stretched and tarred; top line single and bottom lines double, with reversed twist, thus preventing rolling up of seine when dragged through the water.

Following prices are without hauling lines. In your orders give length, depth, size of mesh and size of twine. If you do not understand size of twine, send for samples.

STRAIGHT SEINES

Length Feet	Depth Feet	9 Thread Twine			12 Thread Twine					16 Thread Twine				
		Size of Sq. Mesh. in.			Size of Sq. Mesh. inches					Size of Sq. Mesh. inches				
		1	1¼	1½	1	1¼	1½	1¾	2	1	1¼	1½	1¾	2
20	4	$1.23	$1.11	$1.02	$1.45	$1.23	$1.05	$0.96	$0.90	$1.56	$1.26	$1.12	$1.05	$1.00
30	5	2.16	1.80	1.68	2.40	2.05	1.80	1.58	1.50	2.85	2.35	1.92	1.88	1.55
40	6	3.10	2.75	2.40	3.75	3.00	2.55	2.40	2.25	4.05	3.53	3.00	2.55	2.33
50	6	4.00	3.27	3.00	4.65	3.75	3.15	2.85	2.70	5.40	4.05	3.75	3.30	2.93
50	7	4.25	3.75	3.30	4.95	4.20	3.45	3.15	2.93	5.63	4.88	4.12	3.53	3.30
60	8	5.75	4.75	4.35	6.45	5.55	4.50	4.05	3.75	7.95	6.00	5.25	4.50	4.13
75	8	7.20	5.93	5.45	8.07	6.95	5.63	5.07	4.70	9.95	7.50	6.57	5.63	5.16
75	9	7.80	6.60	5.85	9.00	7.35	6.00	5.40	4.95	10.95	8.10	7.13	6.15	5.70
Price per yard in lengths of 30 yards or more	6	.24	.20	.18	.29	.23	.20	.18	.15	.33	.26	.23	.20	.18
	8	.29	.24	.23	.33	.29	.23	.21	.20	.41	.30	.27	.23	.21
	10	.33	.29	.28	.41	.32	.27	.24	.21	.47	.36	.30	.29	.24
	12	.39	.32	.29	.45	.36	.30	.27	.24	.54	.41	.35	.30	.27
	14	.44	.35	.30	.51	.41	.33	.30	.26	.60	.47	.39	.34	.30
	15	.45	.38	.32	.56	.42	.35	.32	.27	.65	.50	.42	.36	.32
	16	.48	.39	.35	.59	.45	.36	.33	.29	.68	.53	.44	.38	.33
	18	.53	.44	.38	.63	.50	.41	.35	.32	.75	.57	.48	.41	.36
	20	.57	.47	.39	.69	.54	.45	.38	.33	.83	.63	.53	.45	.39

TAPERED LAKE AND RIVER SEINES

Tapered Seines are deeper in the center than at the ends, thus forming a bag in the center when dragging through the water.

Length feet	Depth Center feet	Depth at Ends feet	12 Thread Twine					16 Thread Twine				
			Size of Sq. Mesh. inches					Size of Sq. Mesh. inches				
			1	1¼	1½	1¾	2	1	1¼	1½	1¾	2
20	4	3	$1.35	$1.05	$1.02	$0.95	$0.90	$1.43	$1.28	$1.13	$1.05	$0.90
30	4	3	1.88	1.77	1.50	1.43	1.35	2.25	1.80	1.65	1.50	1.35
40	5	4	3.15	2.63	2.16	2.03	1.88	3.30	2.85	2.55	2.25	2.10
48	5	4	3.45	3.00	2.70	2.40	2.25	4.28	3.30	3.00	2.70	2.48
50	5	4	3.93	3.30	2.85	2.55	2.35	4.73	3.56	3.20	2.82	2.63
60	6	5	5.03	4.50	3.60	3.38	3.00	6.00	4.88	4.05	3.68	3.38
65	8	7	6.90	5.63	4.50	4.13	3.98	7.88	6.45	5.35	4.95	4.50
72	7	6	6.98	5.70	4.80	4.28	4.12	8.10	6.60	5.55	5.10	4.65
90	8	7	9.66	7.58	6.75	5.76	5.40	10.94	8.90	7.56	6.75	6.08
100	8	7	10.73	8.40	7.50	6.38	6.00	12.15	9.90	8.40	7.50	6.75
120	10	8	14.25	11.85	9.75	9.00	8.25	17.25	13.13	11.40	9.90	9.00
150	12	10	21.45	16.50	14.25	12.00	11.25	24.75	19.65	16.50	14.10	12.75
180	12	10	25.75	19.80	17.10	14.40	13.50	29.70	23.58	19.80	16.92	15.30
200	14	10	30.00	24.00	19.50	17.55	15.60	36.00	27.38	23.40	20.40	17.70
250	14	10	37.50	30.00	24.37	21.93	19.50	45.00	34.23	29.25	25.50	22.13
300	14	10	45.00	36.00	29.25	26.33	23.40	54.00	41.07	35.10	30.60	26.55

For Seines tanned and barked add 10 per cent to above list.
For Seines tarred add 10 per cent to above list.

POCKETS OR BAGS FOR SEINES

These Bags are put in center of seine and will form a regular pocket, from which fish are unable to escape. The size of Bag required is figured according to depth of seine in center, viz., a seine 4 feet deep in center requires a 4-foot bag, one 6 feet deep in center, a 6-foot bag, etc.

Following prices are for bags complete, ready to be attached to seine, made of superior quality cotton seine twine:

	Twelve-Thread Twine				Sixteen-Thread Twine			
Size of Square Mesh.....inches	¾	1	1¼	1½	¾	1	1¼	1½
4 feet long, 4 feet deep, each.....	$2.67	$1.20	$0.90	$0.78	$4.14	$1.29	$1.10	$0.95
6 " 6 " "	3.75	2.16	1.95	1.65	4.95	2.82	2.43	2.03
8 " 8 " "	5.67	3.45	3.02	2.55	8.97	4.08	3.75	3.45
10 " 10 " "	7.20	4.65	4.05	3.48	13.76	4.95	4.65	4.00
12 " 12 " "	11.16	5.22	4.55	4.29	18.72	5.46	5.22	4.62
14 " 14 " "	15.33	6.06	5.35	4.80	26.20	6.50	6.06	5.43
16 " 16 " "	21.05	6.90	6.06	5.28	32.07	7.45	6.86	6.35

GILL OR SET NETS

Hung, Ready for Use

Made of the best linen twine. With floats and sinkers complete.

Depth Feet	Size of Mesh inches	No. of Twine	Per yard	Depth Feet	Size of Mesh inches	No. of Twine	Per yard
3½	2	40	$0.10	6	1¼	40	$0.20
4	1	40	.18	6	1½	35	.17
4	1¼	40	.15	6	1¾	35	.15
4	1½	35	.14	6	2	35	.14
4	1¾	35	.12	6	2¼	30	.12
4	2	40	.11	6	2½	30	.12
5	1	40	.21	7	1½	25	.21
5	1¼	40	.17	7	1¾	20	.20
5	1½	35	.15	7	2	20	.17
5	1¾	35	.14	8	1½	25	.21
5	2	40	.12	8	1¾	20	.18
5	2¼	40	.11	8	2	20	.18
5	2½	40	.10½	8	2¼	18	.17
6	1	40	.24	8	2½	18	.15

COTTON GILL OR SET NETS

Made of Sea Island cotton gilling twine, a very fine and strong twine, made especially for Gill Nets. Mounted with floats and sinkers complete, ready for use.

Following prices are per running yard, hung on lines complete, ready for use:

Depth feet	Size of Mesh inches	No. of Twine	Per yard	Depth feet	Size of Mesh inches	No. of Twine	Per yard
4	1¼	28–4	$0.10	6	1¾	28–4	$0.11
4	1½	28–4	.09	6	2	28–4	.10
4	1¾	28–4	.08½	7	1¼	28–4	.15
4	2	28–4	.08	7	1½	28–4	.12½
5	1¼	28–4	.11½	7	1¾	28–4	.12
5	1½	28–4	.11	7	2	28–4	.11
5	1¾	28–4	.10	8	1¼	28–4	.17
5	2	28–4	.09	8	1½	28–4	.14
6	1¼	28–4	.17	8	1¾	28–4	.13
6	1½	28–4	.12	8	2	28–4	.12

SPECIAL CREEK SEINES

Mounted complete on lines with never-sink white cedar floats, and our own improved cast lead sinkers. Following prices are for seines complete, except extra hauling lines.

Made of superior quality cotton seine twine.

	¾ Inch Square Mesh, 9 Thread Twine					¾ Inch Square Mesh, 12 Thread Twine				
Depth, feet	4	5	6	7	8	4	5	6	7	8
10 ft. long, each	$1.17	$1.32	$1.47	$1.62	$1.77	$1.41	$1.65	$1.89	$2.13	$2.37
12 " "	1.40	1.58	1.76	1.95	2.12	1.69	1.98	2.27	2.56	2.85
15 " "	1.75	1.92	2.20	2.43	3.65	2.12	2.47	2.83	3.19	3.55
20 " "	2.28	2.58	2.88	3.18	3.48	2.76	3.24	3.72	4.20	4.60
25 " "	2.85	3.22	3.60	3.97	4.35	3.45	4.05	4.65	5.25	5.85
Price per yd. in 10 yard lengths or more	.34	.38	.43	.48	.52	.41½	.49	.56	.63	.70

	¾ Inch Square Mesh, 16 Thread Twine					½ Inch Square Mesh, 9 Thread Twine				
Depth, feet	4	5	6	7	8	3	4	5	6	7
10 ft. long, each	$1.53	$1.80	$2.07	$2.34	$2.61	$1.32	$1.65	$1.95	$2.28	$2.58
12 " "	1.84	2.16	2.48	2.81	3.13	1.58	1.98	2.34	2.74	3.10
15 " "	2.29	2.70	3.10	3.51	3.91	1.98	2.47	2.92	3.42	3.87
20 " "	3.00	3.54	4.08	4.62	5.16	2.79	3.24	3.87	4.50	5.13
25 " "	3.75	4.42	5.10	5.77	6.45	3.26	4.05	4.84	5.62	6.40
Price per yd. in 10 yard lengths or more	.45	.53	.61	.69	.77	.39	.48	.58	.67	.77

	½ Inch Square Mesh, 12 Thread Twine					½ Inch Square Mesh, 16 Thread Twine				
Depth, feet	3	4	5	6	7	3	4	5	6	7
10 ft. long, each	$1.86	$2.19	$2.52	$2.85	$3.18	$1.59	$2.40	$3.21	$4.02	$4.83
12 " "	2.23	2.63	3.02	3.42	3.82	1.91	2.88	3.85	4.82	5.79
15 " "	2.79	3.28	3.78	4.27	4.78	2.38	3.60	4.81	6.03	7.25
20 " "	3.66	4.32	4.98	5.64	6.30	3.25	4.74	6.36	7.98	9.60
25 " "	4.56	5.40	6.22	7.05	4.87	3.90	5.92	7.95	9.97	12.00
Price per yd. in 10 yard lengths or more	.55	.65	.75	.85	.94	.44	.71	.96	1.20	1.44

Examine all Nets carefully on their arrival.

We cannot consider claims for shortage or imperfections after Seines or Nets have been used.

SPECIAL CREEK SEINES

MESH	½ INCH CENTER, 1 INCH ENDS			
Depth	4 ft.	5 ft.	6 ft.	7 ft.
10 feet ..... each	$0.75	$0.73	$0.90	$0.98
15 " ..... "	1.13	1.25	1.35	1.47
20 " ..... "	1.50	1.65	1.80	1.95
25 " ..... "	1.88	2.07	2.25	2.45
Per yard ..... "	.23	.25	.27	.29½

CREEK SEINES

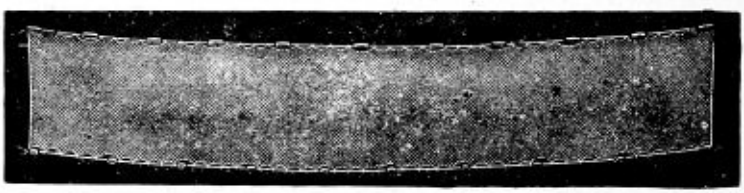
MESH	½ INCH SQUARE				¾ INCH SQUARE		
Depth	3 ft.	4 ft.	5 ft.	6 ft.	4 ft.	5 ft.	6 ft.
10 feet ..... each	$0.73	$0.98	$1.20	$1.43	$0.90	$1.00	$1.08
12 " ..... "	.90	1.17	1.44	1.71	1.08	1.20	1.31
15 " ..... "	1.13	1.47	1.80	2.15	1.35	1.49	1.62
20 " ..... "	1.50	1.95	2.40	2.85	1.80	1.98	2.16
25 " ..... "	1.88	2.45	3.00	3.57	2.25	2.48	2.70
Per yard ..... "	.23	.30	.36	.44	.27	.30	.33

NETTING FOR CREEK AND MINNOW SEINES

Per Yard Stretched

Mesh	Depth 2½ ft.	Depth 3 ft.	Depth 4 ft.	Depth 5 ft.	Depth 6 ft.
¼ inch square ..... each	$0.22	$0.27	$0.38	$0.47	$0.53
⅜ " " ..... "	.16	.18	.22	.25	.28
½ " " ..... "	.....	.13	.17	.22	.26
¾ " " ..... "	.....	.....	.15½	.17½	.19

MINNOW SEINES



Made of best No. 20-6 cord cable seine twine, mounted with floats and sinkers complete.
Following prices are for seines complete, ready for use:

MESH	⅛ INCH SQUARE					¼ INCH SQUARE			
Depth	2½ ft.	3 ft.	4 ft.	5 ft.	6 ft.	3 ft.	4 ft.	5 ft.	6 ft.
10 feet ..... each	$1.28	$1.50	$2.03	$2.48	$2.78	$0.78	$1.20	$1.35	$1.50
12 " ..... "	1.53	1.80	2.43	2.97	3.33	1.17	1.44	1.62	1.80
15 " ..... "	1.92	2.25	3.05	3.72	4.16	1.46	1.80	2.03	2.25
20 " ..... "	2.55	3.00	4.05	4.95	5.55	1.95	2.40	2.70	3.00
25 " ..... "	3.20	3.75	5.07	6.20	6.95	2.43	3.00	3.38	3.75
Per yard ..... "	.38½	.45	.60	.75	.84	.30	.36	.41	.45

COMMON SENSE MINNOW SEINES

Made of heavy woven netting, ⅛ square inch mesh, not as strong or lasting as our regular minnow seines, yet a very good net for the money, and will catch the smallest minnow. Mounted on lines, with floats and improved cast lead sinkers complete ready for use, except extra hauling lines.

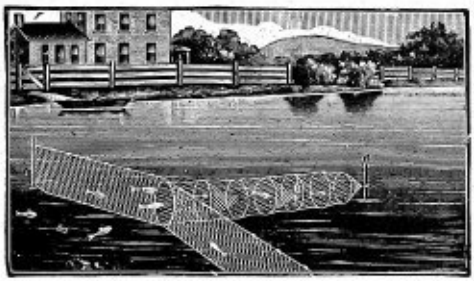
Following prices are for seine complete, except extra hauling lines:

Made 4 feet deep only.

Length	4 ft.	6 ft.	8 ft.	10 ft.	12 ft.	15 ft.	20 ft.	25 ft.	30 ft.	40 ft.	50 ft.
Each	$0.33	$0.50	$0.66	$0.78	$0.94	$1.16	$1.56	$1.98	$2.30	$3.12	$3.95

Common Sense Netting, 4 feet deep only. 15 cents per yard.

PERFECTION FYKE NETS WITH WINGS



No.	No. of Throats	Height at Mouth feet	Length of Net feet	No. of Hoops	No. of Twine Thread	Size Mesh Square inch	Length of Each Wing feet	Each White	Each Tarred
00	Single	2	6	4	9	3	6	$2.10	$2.34
0	Double	2½	8	6	16	1	6	2.85	3.15
1	Single	3	10	6	24	1¼	9	3.30	3.75
1A	Double	3	10	6	24	1¼	9	3.60	4.05
2	Single	4½	18	8	24	1½	15	6.30	6.90
3	Double	4	16	7	24	2-1¾-1½	12	4.80	5.25
3A	"	4	16	7	28	2-1¾-1½	12	4.95	5.80
3B	"	4	16	7	32	2-1¾-1½	12	5.40	6.00
4	"	4½	18	8	32	2½-2-1½	15	6.60	7.20
5	"	5	18	8	32	2½-2-1½	15	6.90	7.65
6	"	6	18	8	28	2½-2-1½	20	9.60	10.50
7	"	2½	8	6	24	1 inch	6	3.30	4.25
8	Single	3	10	6	24	1 "	9	4.22	4.77
9	"	4½	18	8	24	1 "	15	9.48	10.55
10	Double	5	16	7	24	1 "	12	8.15	9.05
11	"	5	18	8	24	1 "	15	11.10	12.35
12	"	6	18	8	24	1 "	20	14.65	16.38

PERFECTION FUNNEL BAIT NETS

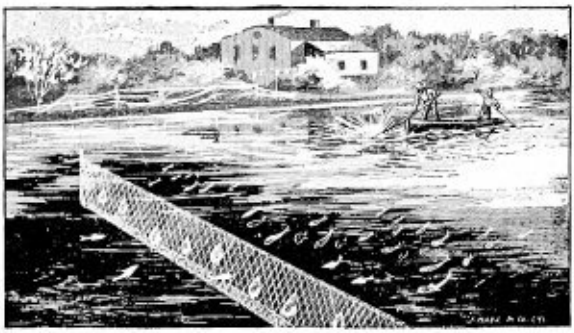
Funnel Bait Nets are the same as Bait Hoop Nets, but have no wings

No.	No. of Throats	Height at Mouth feet	Length of Net feet	No. of Hoops	Size of Twine Thread	Size Mesh Square inches	Net White Each	Net Tarred Each	Web only White Each	Web only Tarred Each
00	Single	2	6	4	9	¾	1.20	$1.35	$0.60	$0.72
0	Double	2½	8	6	16	1	1.80	2.05	.90	1.08
1	Single	3	10	6	24	1¼	2.40	2.65	1.20	1.41
1A	Double	3	10	6	24	1¼	2.70	3.05	1.50	1.80
2	Single	4½	18	8	24	1½	4.50	4.95	2.70	3.10
3	Double	4	16	7	24	2-1¾-1½	3.45	3.90	2.10	2.52
3A	"	4	16	7	28	2-1¾-1½	3.60	4.05	2.25	2.67
3B	"	4	16	7	32	2-1¾-1½	4.15	4.50	2.55	3.27
4	"	4½	18	8	24-32	2½-2-1½	4.95	5.40	3.00	3.42
5	"	5	18	8	28-32	2½-2-1½	5.10	5.70	3.15	3.70
6	"	6	18	8	28	2½-2-1½	6.90	7.50	3.60	4.15
7	"	2½	8	6	24	1 inch	2.55	2.85	1.50	1.78
8	Single	3	10	6	24	1 "	3.30	3.75	2.03	2.46
9	"	4½	18	8	24	1 "	6.60	7.20	4.20	4.75
10	Double	4	16	7	24	1 "	6.00	6.60	3.90	4.45
11	"	5	18	8	24	1 "	8.10	9.00	5.70	6.55
12	"	6	18	8	24	1 "	11.10	12.30	7.50	8.65

Price with Web only means netting complete for Funnel Bait net, without Hoops.

Bait Bags, ¾ inch mesh, 12 thread.....per doz., $1.50
" " ½ " " 9 " ..... " 2.15
" " ⅜ " " 20-12 thread..... " 2.95

TRAMMEL NETS



Our Trammel Net has three webs hung on a single top and a single bottom line; lines are of best quality cotton. Of the three webs, two outside webs have large meshes and are made of No. 16 cotton seine twine; the inside web is made of best quality linen twine, which is hung slack, forming a bag in which the fish coming from either side are caught, unable to escape. Instructions how to fish with Trammel Nets sent with each net.

FOLLOWING PRICES ARE PER RUNNING YARD, HUNG ON LINES, COMPLETE, READY FOR USE

Depth feet	Outside Mesh inches	Inside Mesh inches	Inside Twine No.	Per yard	Depth feet	Outside Mesh inches	Inside Mesh inches	Inside Twine No.	Per yard
3½	6	¾	25	$0.33	6	8	1½	18	$0.30
3½	6	1	25	.26	6	8	1¾	18	.27
3½	6	1¼	25	.23	6	8	2	16	.26
3½	6	1½	18	.21	6	8	2½	16	.23
3½	6	1¾	18	.20	6	8	3	16	.22
3½	6	2	16	.18	7	8	1¼	25	.38
4	6	¾	25	.36	7	8	1½	18	.33
4	6	1	20	.30	7	8	1¾	18	.30
4	6	1¼	25	.26	7	8	2	16	.27
4	6	1½	18	.24	7	8	2½	16	.26
4	6	1¾	18	.21	7	8	3	16	.24
4	6	2	16	.20	8	8	1¼	25	.42
4½	7	¾	25	.39	8	8	1½	18	.36
4½	7	1	20	.32	8	8	1¾	18	.33
4½	7	1¼	25	.27	8	8	2	16	.29
4½	7	1½	18	.24	8	8	2½	16	.26
4½	7	1¾	18	.23	8	8	3	16	.25
4½	7	2	16	.21	9	8	1¼	20	.47
4½	7	2½	12	.19	9	8	1½	18	.40
4½	7	3	12	.18	9	8	1¾	18	.37
5	8	¾	25	.42	9	8	2	16	.34
5	8	1	20	.33	9	8	2½	16	.32
5	8	1¼	25	.29	9	8	3	16	.30
5	8	1½	18	.27	10	8	1¼	20	.51
5	8	1¾	18	.24	10	8	1½	18	.42
5	8	2	16	.23	10	8	1¾	18	.40
5	8	2½	16	.21	10	8	2	16	.37
5	8	3	16	.19	10	8	2½	16	.36
6	8	1	20	.39	10	8	3	16	.34
6	8	1¼	25	.33					

PICKLE NETS (web only)
1 inch square Mesh No. 40 Twine

12 inch diameter ..... per doz., $4.95
15 " " ..... " 6.00

AQUARIUM NETS
With Handle

Per doz $3.30

COTTON CRAB NETS
1 inch square Mesh 12-thread Twine

18 inch ..... per doz., $1.20
20 " ..... " 1.50
24 " ..... " 1.65

PUDDING OR SAUSAGE NETS
1 inch square Mesh No. 40 Twine with Draw String

100 lb Capacity ..... per doz., $14.10
200 " ..... " 19.05
250 " ..... " 23.04

STREET BANNERS (net only)

Made of best quality twine, roped all around with ½-inch pure Manila rope, with loop in each corner. No. 24 twine 2½ inch square mesh. Per square foot $0.03

Any other size of mesh and twine made to order.

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